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FIRE ENGINEERING

The Journal of the Fire [illegible]tion Profession Since 1877

A Reuben H · Donnelley Publication

L. A. County F. D. photo

Converted B-25 "bombs" brush fire with water-borate solution

. . . see story page 280

APRIL • 1959

Customer Satisfaction

Another MAXIM for Doylestown, Pa.

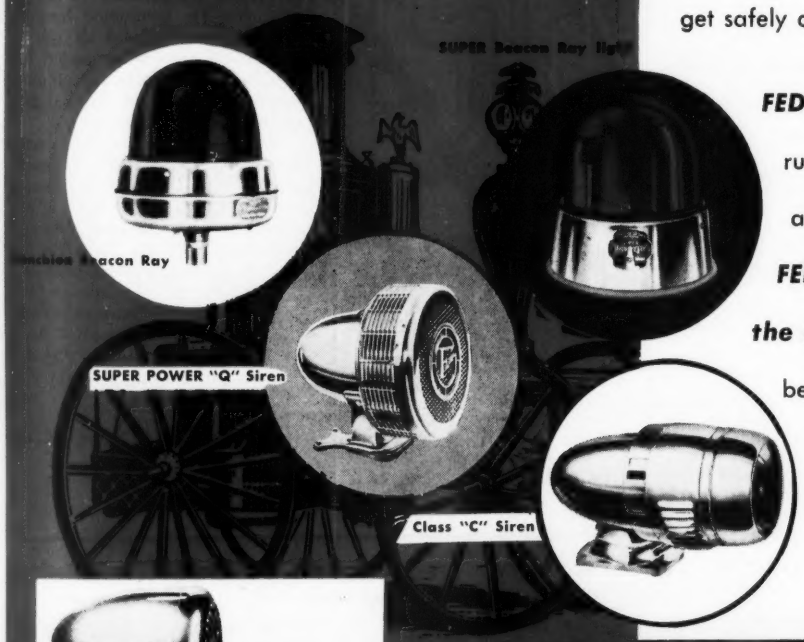
The surest proof of Customer Satisfaction is the Continuing Confidence of Valued Customers . . .

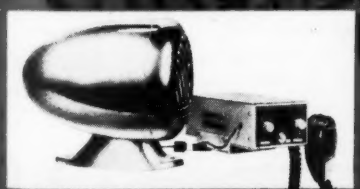
MAXIM MOTOR COMPANY

Builders of the World's Finest Fire Apparatus

MIDDLEBORO, MASSACHUSETTS

GIVE YOUR TRUCK A BOOST!





Have an "INTERCEPTOR", transistorized siren, on your car. It's also a mobile public address unit. Give orders as you approach or move about in your car. Amplify incoming radio messages, so you can hear them when you leave your car. It's described in Bulletin #325 of Catalog #300. WRITE FOR IT TODAY!

Chiefs! GET ACTION *quicker*

It takes more than an engine
to get fire apparatus through
present day traffic.
Horsepower and manpower can
use a powerful assist, and it's
available at comparatively ***low cost.***

Powerful ***FEDERAL*** Coaster Sirens scream
far ahead for the right of way.
Beacon Rays identify and pinpoint
the vehicle calling.
This ample warning lets
slow-thinking motorists and pedestrians
get safely out of the way.

FEDERAL Signals boost
running time, boost safety enroute
and reduce losses.
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the best, cost less
because they ***do more.***
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Catalog #300.

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FEDERAL SIGN and SIGNAL Corporation

FIRE ENGINEERING

VOL. 112 APRIL, 1959 NO. 4

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Tip to a New Department

We received a telephone call recently from a person seeking information about the proper steps to be taken to create a volunteer fire department. The caller stated he didn't expect to obtain all the details from us, but was hoping we could direct him to the necessary agencies who could assist him solve the problems.

We recommended a visit to his state rating board, the state fire chiefs association and his own area fire and public officials.

A few days ago he again called to thank us for the advice which eventually enabled him to begin laying the groundwork for the department. He mentioned how cooperative and helpful all the organizations we recommended had been and that the local committee expressed thanks for starting them off without any lost motion.

At the close of the conversation he stated that the prospective members of the new department were already taking training and hoped to achieve a good degree of competence by the time the department was legally recognized.

Naturally he became a subscriber to FIRE ENGINEERING with the expressed intention of learning everything possible about the field and its current happenings.

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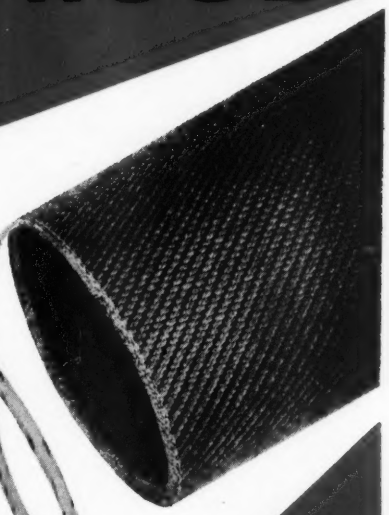
Fabric FIRE HOSE

PRESENTS



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We have a few protected territorial appointments which are available and will review your qualifications on a confidential basis.

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SANDY HOOK, CONN.

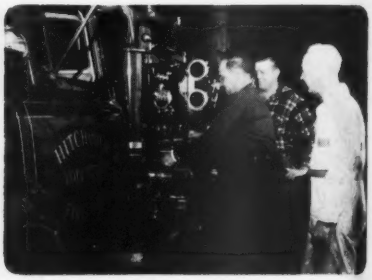
IN CANADA *Pierre Thibault* CANADA, LTD., LTEE., PIERREVILLE, QUEBEC

A FIRE CHIEF GOES TO SCHOOL

Typical of the thousands of fire chiefs and crewmen that each year attend the John Bean Fire School, Chief A. G. Terrabonne of Hitchcock, Texas is seen here as he completes his course with a group of fellow firemen from all parts of the country. Chief Terrabonne knows that keeping abreast of modern fire-fighting methods like the John Bean High-Pressure Fog System, is the surest way to guarantee his community the safety and protection with which he is entrusted. That's why this free training by John Bean fire-fighting experts is available the year 'round to you and your men as a part of the regular service that goes with every John Bean truck. Put yourself in Chief Terrabonne's place as he is seen below in some of the many stages of his own training.

ADVANCED FEATURES of the John Bean Firefighters are first learned in the classroom, where Chief Terrabonne and his group study the proper function and operation of the equipment they will soon be using.

FIRST-HAND EXPERIENCE is an important part of each fireman's training at John Bean. Here Chief Terrabonne learns the proper care and maintenance of his new equipment by actually doing the work himself under expert supervision.



GETTING THE FEEL OF IT! Following a day in the classroom, Chief Terrabonne and one of his crewmen, Cecil Cruse, receive individual training from factory specialists on the operation of their own equipment.

LIVE FIRE FIGHTING of both Class 1 and Class 2 fires is practiced by each student at the John Bean proving grounds. Here, Chief Terrabonne quickly knocks out a building fire with John Bean High-Pressure Fog.

BURNING OIL TANK . . . . one of the most difficult of all fires to combat . . . is easily and quickly put out by members of Chief Terrabonne's group with the triple action of John Bean High-Pressure Fog.

18 GALLONS OF WATER—18 SECONDS LATER . . . and the raging fire in this 18 x 36 foot oil pit is completely extinguished! Dramatic proof of what John Bean High-Pressure Fog can do when the going is rough.

BETTER EQUIPPED — BETTER TRAINED! As Chief Terrabonne and Cecil Cruse take delivery of their new truck and return to Hitchcock, Texas, the people there can well be thankful. For with them they bring the confidence and skill to give their community the hard-hitting, split-second protection for which John Bean is known the world over.

See your John BEAN representative, or write today to arrange for a High Pressure Fog Fire Fighter demonstration

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Lansing 4, Michigan

P. O. Box 145
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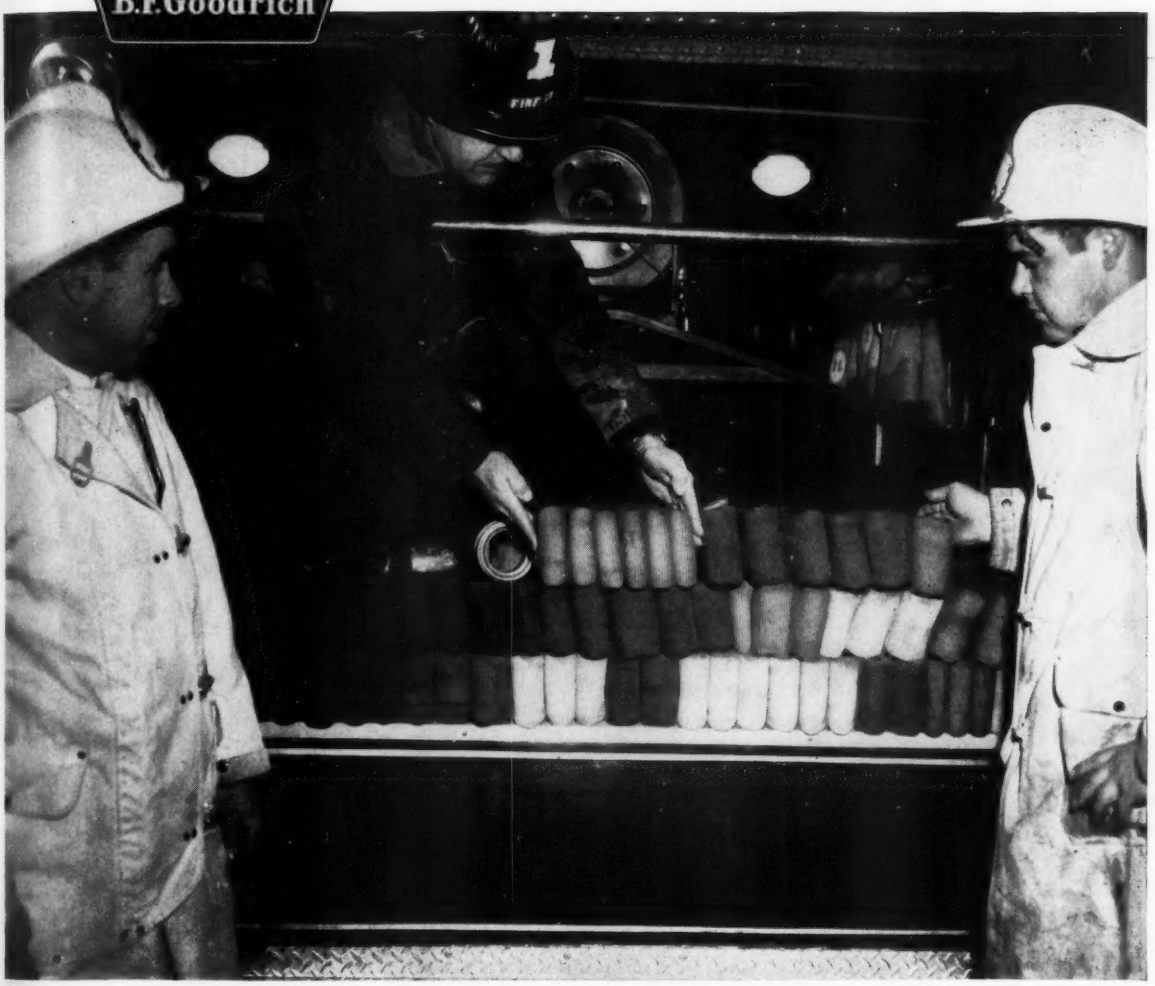
B.F.Goodrich



This hose stows more compactly, is easier-handling under pressure

THAT B.F.Goodrich hose coils tighter than the ordinary hose shown with it because it's lighter, much more flexible. Hundreds of extra feet of hose can be racked on a truck—up to a third more on a standard truck. The chief of this fire department prefers it because it is easier to handle under pressure, saves time at fires.

The flexibility and lightness of this hose comes from the Dacron fiber used as "filler" cords which go around the hose and carry the load under pressure. These cords are thinner, yet stronger than cords used for reinforcement on heavier, bulkier hose. It is tested to 600 pounds pressure and can stand up to twice as much pressure without bursting.

For areas where excess moisture is a problem, B.F.Goodrich has developed the exclusive Superseal protection for hose that makes it 10 times more resistant to mildew attack and rotting. Most treatments just coat the surface of the hose, but Superseal penetrates every cord of the inner and outer jacket, preparing the hose for all kinds of weather. Superseal protection costs no more than ordinary hose treatments.

When you want a hose that's light, flexible, and will last longer than any other hose made, get B.F.Goodrich hose with Superseal protection. Your B.F.Goodrich fire hose distributor can tell you more about it, or write *B.F.Goodrich Industrial Products Company, Dept. M-578, Akron 18, Ohio.*

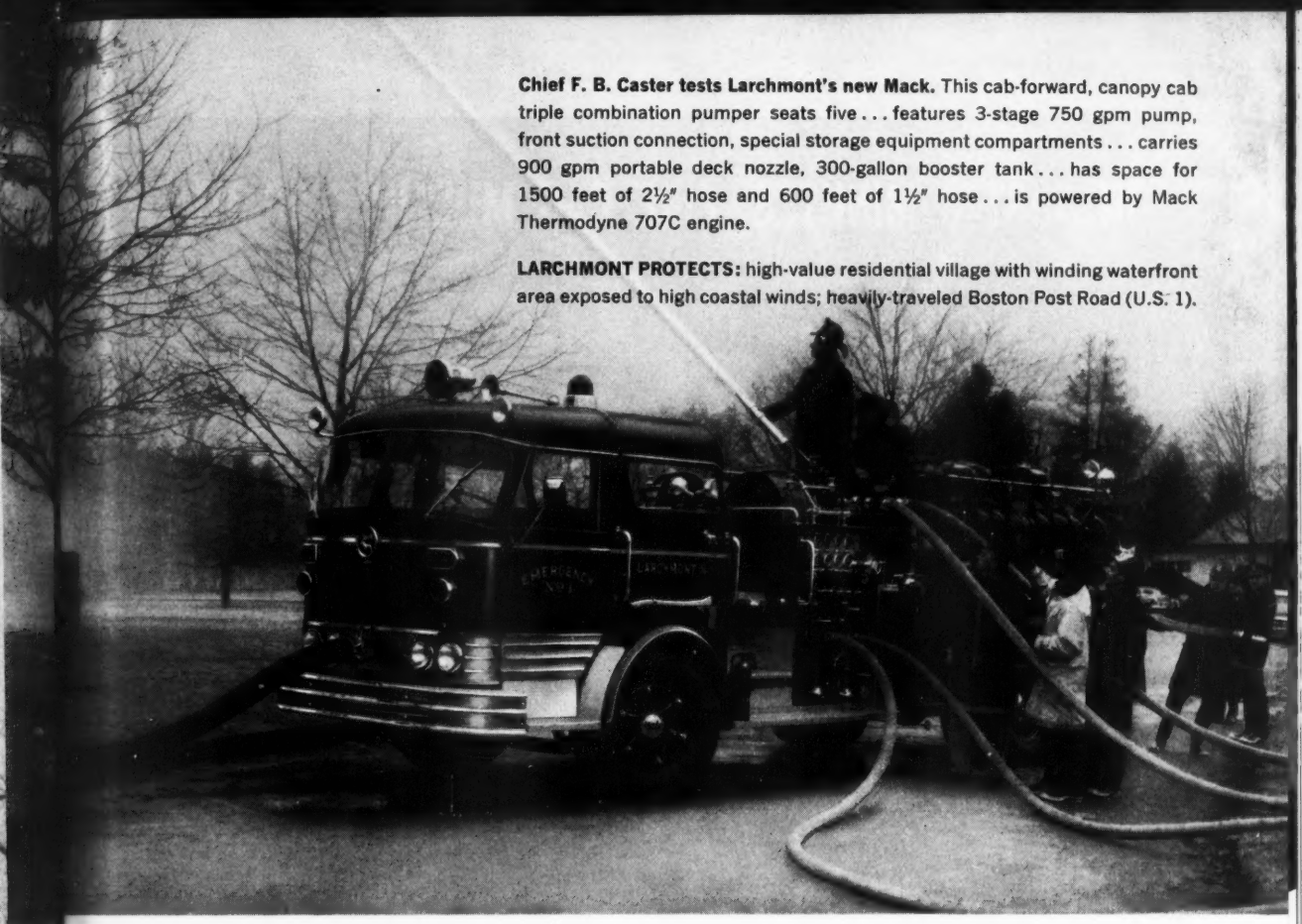
B.F.Goodrich *fire hose*

Chief A. W. Leggat drills Mount Vernon's new Mack. Rated at 1250 gpm, it's a semi-cab, conventional triple combination pumper that features rear step suction intake, a 1250 gpm portable deck nozzle and a 300-gallon booster tank . . . has space for 1000 feet of 1½" hose and 1800 feet of 2½" hose . . . is powered by Mack Thermodyne 707C engine.

MT. VERNON PROTECTS: high population-density city including many large apartment houses; widespread industrial area; one of East Coast's largest gasoline and oil depots.

Engineered for every firefighting need. From the wide selection of custom-built Mack models you can have cab-forward or standard units...with Mack-built engines, including the famous 276 hp Mack Thermodyne® 707C (which develops 640 foot-pounds of torque at 1400 rpm) . . . with conventional or automatic transmissions . . . with standard, two-stage pump or the new Uni-Control Hi-Stage pump . . . with air or hydraulic braking systems . . . with the gear ratios and built-in extras that you need.

MACK FIRST NAME FOR



Chief F. B. Caster tests Larchmont's new Mack. This cab-forward, canopy cab triple combination pumper seats five . . . features 3-stage 750 gpm pump, front suction connection, special storage equipment compartments . . . carries 900 gpm portable deck nozzle, 300-gallon booster tank . . . has space for 1500 feet of 2½" hose and 600 feet of 1½" hose . . . is powered by Mack Thermodyne 707C engine.

LARCHMONT PROTECTS: high-value residential village with winding waterfront area exposed to high coastal winds; heavily-traveled Boston Post Road (U.S. 1).

MACK FIRE APPARATUS rings the bell in WESTCHESTER

A tremendous surge of home and plant construction has intensified the need for dependable fire protection in New York State's famous Westchester County . . . has placed a premium on absolutely top-performing equipment—one reason why many of its forward-looking communities are putting Mack apparatus into service.

Equally important, there's the growing awareness of a nation-wide swing to Macks—sparked by a growing conviction that Mack performance is in a class by itself. That's because Mack controls the performance of its finished fire apparatus by making—and testing—more of its own major components than anyone else in the industry . . . and to far higher standards. Ask Mack to show you models that are engineered right, designed right, *built* right for your department. Mack Fire Apparatus, Sidney, Ohio. In Canada: Mack Trucks of Canada, Ltd.

You'll find late model Mack apparatus in these Westchester Departments:

Briarcliff Manor
Hastings on Hudson
Larchmont
Mamaroneck (Village)
Millwood
Mount Vernon
Peekskill
Portchester

FIRE APPARATUS

COMPLETE LINE OF PUMPERS—500 to 1250 GPM . . . SQUAD AND HOSE WAGONS . . . AERIALS 65′ to 100′ . . . COMBINATION LADDER TRUCKS

Save vital seconds with lightweight hose made with DACRON®

POLYESTER FIBER

MORE COMPACT—up to 500 extra feet of hose made with Du Pont DACRON fits into standard truck beds.

EASIER TO HANDLE—hose made with DACRON saves seconds when seconds count, loads quickly after fire.

Seconds often spell the difference between controlling a fire and disaster. That's why hose containing filler cords of Du Pont DACRON* polyester fiber is essential to modern fire-fighting efficiency. Hose containing DACRON has unusual strength, yet is lighter than ordinary hose. It has great flexibility and is easier to handle—gets into action fast. Make sure the hose you buy is made with Du Pont DACRON. Hose made with DACRON is produced by all hose manufacturers. E. I. du Pont de Nemours & Co. (Inc.), Textile Fibers Department, Wilmington 98, Delaware.

Enjoy the "Du Pont Show of the Month" on CBS-TV

DU PONT

REG. U.S. PAT. OFF.

*"Dacron" is Du Pont's registered trademark for its polyester fiber.

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

FIRE HOSE MADE WITH "DACRON" is easier to handle . . .
gives improved performance . . . packs more compactly.

INDIAN

FIRE PUMPS COMPLETE YOUR TRUCK EQUIPMENT!

...ucks without INDIANS — *like hot dogs without mustard* — are incomplete! Now is the time to add INDIAN FIRE PUMPS to your apparatus. Rugged, portable INDIAN FIRE PUMPS are the biggest dollar value you can buy in fire protection equipment.

...ey will handle as much as 40% of your calls — many 20 years ...d are still in use — replacement parts are available instantly ... and they use only CLEAR WATER!

...member — there is only one INDIAN FIRE PUMP! Insist on ...IANS — *they have no equal.*

No. 90 INDIAN
(Sliding Pump Type)

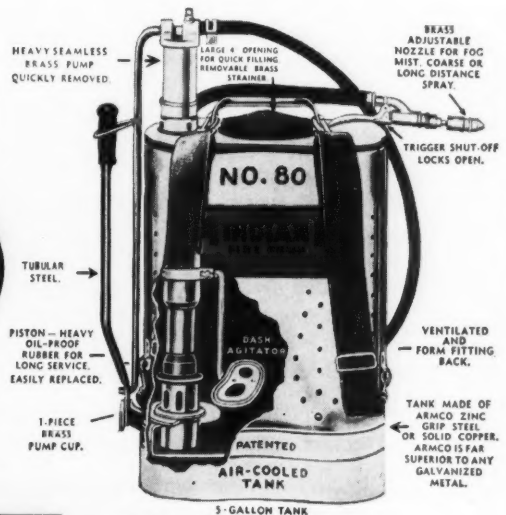
...orm fitting, ventilated tank permits constant circulation ...f air between tank and carrier's back. No dampness. ...eaves arms free for climbing ladders, etc. Highly pop...lar for many years.

Both Types Approved by Underwriters' Laboratories.

Fire fighting authorities who have experimented with a "WET WATER" powder mixed with the water in an **INDIAN FIRE PUMP** tank report it does an excellent job.

No. 80 INDIAN
(Lever Type Pump and Handle)

Heavy steel pump lever. Ventilated tank. 5 gal. capacity. Continuous high pressure. Armco zinc-grip steel or glistening solid brass tank. Strongest construction throughout. Has no equal.


HEAVY SEAMLESS BRASS PUMP QUICKLY REMOVED.
LARGE 4" OPENING FOR QUICK FILLING. REMOVABLE BRASS STRAINER.
BRASS ADJUSTABLE NOZZLE FOR FOG MIST, COARSE OR LONG DISTANCE SPRAY.
TRIGGER SHUT-OFF LOCKS OPEN.
NO. 80
TUBULAR STEEL.
PISTON — HEAVY OIL-PROOF RUBBER FOR LONG SERVICE. EASILY REPLACED.
DASH AGITATOR
VENTILATED AND FORM FITTING BACK.
1-PIECE BRASS PUMP CUP.
TANK MADE OF ARMCO ZINC GRIP STEEL OR SOLID COPPER. ARMCO IS FAR SUPERIOR TO ANY GALVANIZED METAL.
PATENTED
AIR-COOLED TANK
5-GALLON TANK

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- *"I can honestly say that **INDIANS** are worth their weight in gold".*
- *"We consider **INDIAN FIRE PUMPS** to be the most important equipment in our department".*
- *"We use nothing but **INDIANS** for a portable extinguisher. They're the best".*

SEND FOR NEW CATALOG!

Two ways of providing
EXPOSURE PROTECTION

TOO LATE ▲
to prevent serious heat exposure, a valiant attempt is made by firefighters to prevent rupture of tankage, not already involved in flames, with relatively ineffective hose streams.

GRINNELL WATER SPRAY SYSTEM ▶
shown under test at the Marietta, Ohio plant of the Bakelite Union Carbide Plastic Company, a division of the Union Carbide Corporation. Water – when it is applied in time and distributed over the surfaces efficiently by a properly engineered system – is most effective in limiting tank fires and controlling their spread.

Proper safeguards are uppermost in importance in protecting tanks which contain gases and flammable liquids in the event of fire. For example, tanks must be guarded against extreme heat exposure. Leaking gas, if it should develop, must be diluted to the point where it will not burn. And fire, if it should occur, must be localized and controlled or extinguished.

With a Grinnell Water Spray System, you get protection against all these eventualities.

Before heat raises tank temperatures dangerously, an enveloping spray of water provides instant cooling, reducing internal pressure which helps prevent rupture. In addition, air turbulence is created (even in still air) which, in conjunction with the water vapor from the spray, helps dilute the flammable vapors controlling or extinguishing the fire. Flammable products which cannot be safely extinguished can be burned off under the protecting water spray with no damage to adjacent protected equipment.

There is a Grinnell Fire Protection System for every fire hazard. Call on Grinnell for advice about the one suited to your needs. Grinnell Company, Inc., 277 West Exchange Street, Providence 1, R. I.

GRINNELL FIRE PROTECTION SYSTEMS SINCE 1870

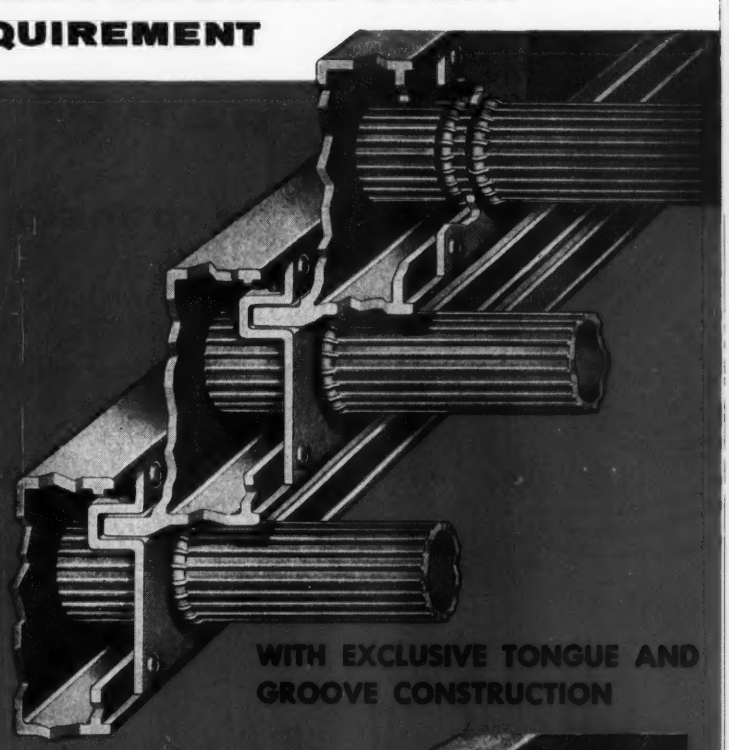
DUO Safety

FIRE LADDERS

NOW...YOUR CHOICE OF AN ALUMINUM FIRE LADDER FOR EVERY USE... EVERY REQUIREMENT

SERIES 1000-A
or Pumper Use

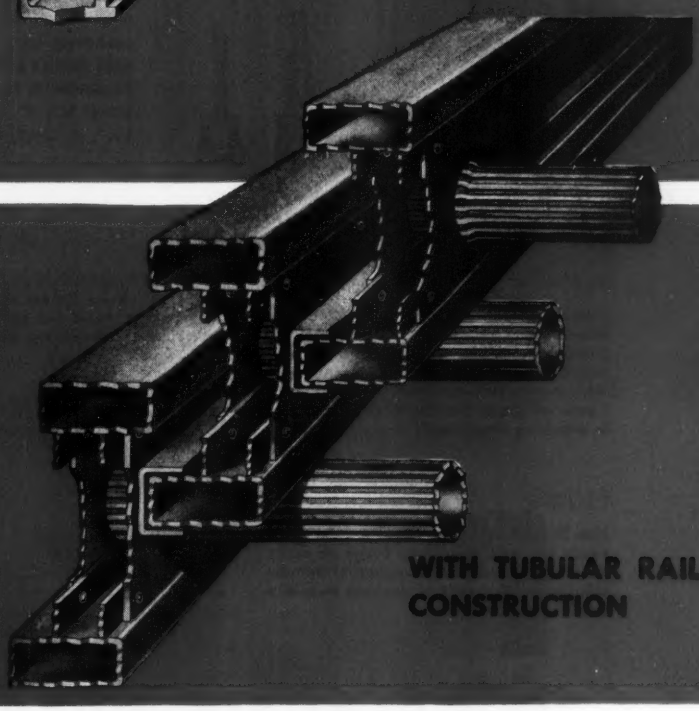
Featuring lightweight Channel Rail Con-ion, and is the substitute, in aluminum, for side wood ladders. This outstanding fire has exclusive tongue and groove arrange-. Duo-Safety's construction development olds sections together firmly, rigidly, with ooks, guides, or obstructions of any kind! es minimum banking height. In two and sections, in lengths up to 30 feet. Rail di-ions—1¼" x 2¾".



WITH EXCLUSIVE TONGUE AND GROOVE CONSTRUCTION

SERIES 900-A
or Service Trucks and Pumper Use

An intermediate ladder in both size and , the 900-A Series features slightly heavier truction than the 1000-A Series, but has the outstanding features. In two and three sec-. in lengths up to 40 feet. Rail dimensions x 3¼".



WITH TUBULAR RAIL CONSTRUCTION

SERIES 500-A
or Service Trucks

Famous aluminum fire ladder that replaces truss ladders and features Tubular Rail truction for greater strength and extraor-y safety. Adopted as standard ladder equip-by fire departments the country over. Made and wall ladders...and in two and three extensions in lengths up to 65 feet.

DUO Safety

DUO-SAFETY
LADDER CORPORATION

809 NINTH STREET
OSHKOSH, WISCONSIN

In Canada: LaFrance Fire Engine and Foamite, Ltd., Toronto

ELKHART'S IMPROVED

HAN-DRAULIC

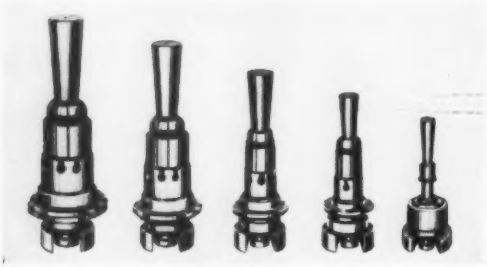
EXPANDER

(Formerly Bell and Pihl)

for attaching expansion ring couplings...

Han-Draulic combines the compact, portable advantages of a hand expander with the smooth, controlled power of hydraulic pressure in one complete unit. Plus this, the HAN-DRAULIC Expander has been re-designed to use Elkhart's patented mandrel and segment holder. Segments from ¾" to 3" can be quickly changed as needed by merely slipping the mandrel and segment holder in and out of the power unit.

No. 422



Elkhart's patented individual size segments with mandrels for use with Han-Draulic Expander in these sizes: ¾", 1", 1¼", 1½", 2", 2½", 3".

More uniformity with hydraulic power

The Han-Draulic Expander utilizes hydraulic pressure to exert a smooth flow of power on the mandrel to expand the expansion ring in the fire hose coupling. This same easy action withdraws the mandrel. Check of gauge permits more uniformity in attaching couplings.

Portable

Han-Draulic is not limited to permanent bench or stand mounting. It can be easily moved from one station to another thereby eliminating necessity of trucking hose to a central location.

More units in department

Because of its modest price, Han-Draulic is a practical choice for multiple units in fire departments. Ideal for small department where large unit was not practical.

Choice of mounting

Han-Draulic complete with stand has a storage shelf for holding individual segments. Han-Draulic can be ordered without stand.

Positive positioning

New stop automatically aligns slots for easier change of segments. Positioning pin prevents any chance for damage to segment.

Elkhart's Two-Prong Expansion Ring Extractor No. 428

NEW IDEA in expansion ring extractors

By twisting rather than hammering or prying, Elkhart's new No. 428, double prong, expansion ring extractor frees rings without slipping or damaging coupling. Makes the job easier—saves bruised knuckles too. Prongs of ground and hardened steel, chromium plated.

ELKHART BRASS MFG. CO., Inc.

ELKHART, INDIANA

More Than Half A Century of Fire Fighting Progress

TO OPERATE
1. REMOVE HOSE — PUSH LEVER
2. SQUEEZE NOZZLE HANDLE TO RELEASE CHEMICAL
3. DIRECT AT BASE OF FLAMES WITH SIDE-TO-SIDE MOTION
ANSUL

Ansul people are proud of the D-MODEL dry chemical extinguishers. These cartridge-operated units combine peak fire-killing power with the important advantages of on-the-spot, field recharge and "fresh-fill" performance. They are available in 5, 10, 20 and 30-pound sizes . . . in either red or white. We'd like to tell you more about the D-MODELS and prove their effectiveness to you. Make an appointment with your Ansul fire protection consultant or write for our latest catalog. ANSUL CHEMICAL COMPANY, MARINETTE, WISCONSIN.

new products, new ideas for better fire protection

ANSUL

REFRIGERATION PRODUCTS
FIRE FIGHTING EQUIPMENT
INDUSTRIAL CHEMICALS

We not only get improved fire and burglary protection, but...

save $10,000 a year!

Vice President

THE SILLCOCKS-MILLER COMPANY

Maplewood, N.J. Established 1910

CUSTOM FABRICATORS OF ADVERTISING, MERCHANDISING AND TECHNICAL SPECIALTIES FOR MODERN INDUSTRIAL MARKETING

protected *Automatically* by ADT

Thousands of business executives from coast to coast join Mr. Herslow in endorsing the effectiveness and economy of ADT Automatic Protection Services for safeguarding property, profits and employees' jobs.

Equipped with automatic sprinklers, the Sillcocks-Miller plant is further safeguarded against fire by ADT Sprinkler Supervisory and Waterflow Alarm Service which automatically summons the fire department whenever the sprinkler operates. This service also maintains a constant automatic check on sprinkler shut-off valves and other water-supply conditions that might impair sprinkler operation.

The entire building, including the vault, is protected against burglary by ADT Burglar Alarm Service which automatically summons police in case of unauthorized entry. Temperature conditions are checked automatically by ADT Heating Supervision.

ADT

May we show you what ADT can do for you?

Whether your premises are old or new, sprinklered or unsprinklered, an ADT specialist will show you how an appropriate combination of ADT Automatic Protection Services can give you better protection than other methods, and *at less expense*. Call our local sales office if we are listed in your phone book; or write to our Executive Office.

Controlled Companies of

AMERICAN DISTRICT TELEGRAPH CO.

A NATIONWIDE ORGANIZATION

Executive Office: 155 Sixth Avenue, New York 13, N. Y.

WORK CLOSE IN...

SAFELY! with reflective-protective gear that turns away radiant heat

How many times have *you* been stalled—turned away by intense heat? How many times have you *known* that you could knock out a fire fast if you could only move a line in really close—or get right to the source with a chemical tank?

All these are times when you could have used special bunker clothing—hood, gloves, coat, or complete suit—made of "Scotch·shield" Brand Aluminized Fabric. This is the amazing material that *reflects 90% of radiant heat*—doesn't absorb it. It's light weight and extremely flexible. Rescue clothing made of this reflective-protective material can be put on quickly and you can move around easily . . . get the job done fast and efficiently . . . not always possible in conventional rescue gear.

Every second you spend at a fire is tough, dangerous work. Cut this time short by working in close with equipment made of "Scotch·shield" Aluminized Fabric. It's the same type of reflective-protective material made by "3M" that's used by many modern city and industrial fire departments and now in use by the USAF.

Send the coupon for free, informative booklet, "When It Takes More Than Courage."

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Name_____ Title_____

Fire Dept. or Firm_____

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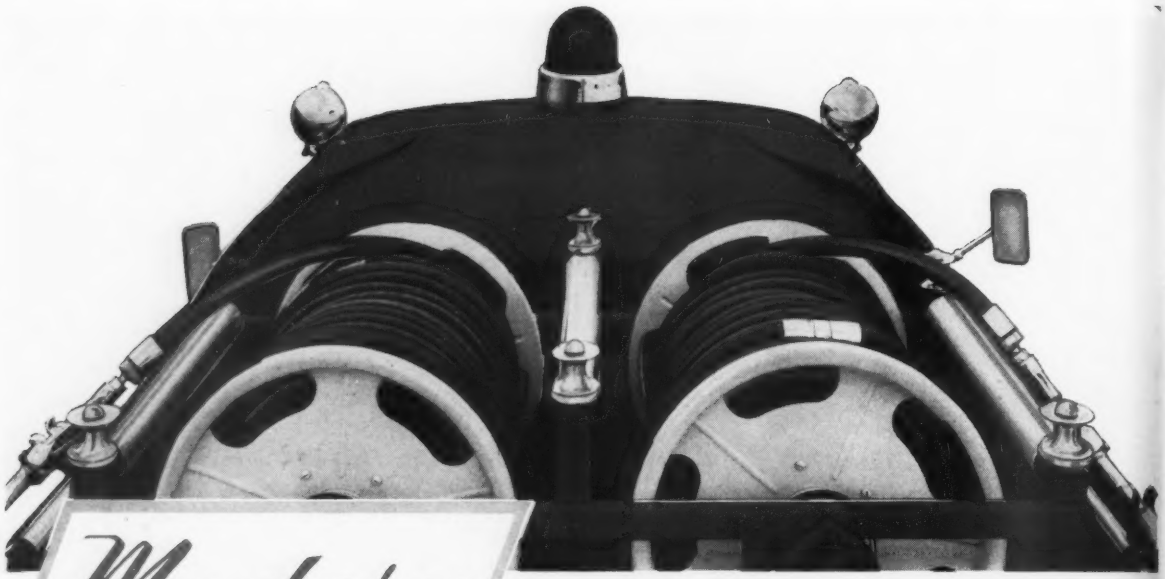
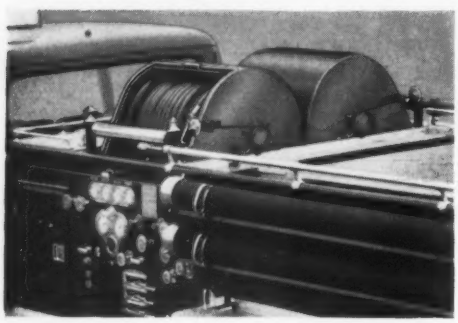
City_____ Zone____ State_____



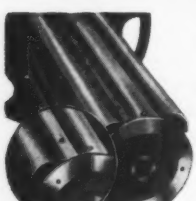
Modern HOSE REEL FEATURES ON American Fire Trucks OFFER MANY ADVANTAGES



From bumper to rear step, American Fire Trucks are packed with features firemen like—features like these superb AFA-built hose reels. See how every detail helps give you faster operation, smoother performance and greater convenience than any other reel built!

- Electric Rewind*. Heavy duty silent V-belt drive is flexible and won't damage equipment or personnel if hose or nozzle become tangled when rewinding.
- One standard heavy-duty starter motor drives *both* reels. Motor can be serviced locally.
- Reel brakes can be adjusted from the ground to prevent back lash.
- Chrome plated brass guide rollers and deep groove spools, and leak proof *ball bearing* stuffing boxes are standard.

Controls on both sides of truck operate reels. Rewinds operate only one at a time to prevent battery overload.



Sliding covers* protect hose reels and fog guns from freezing.

Collapsible, *self-adjusting* spring steel drum louvers flatten when pressure expands hose. Prevents damage to hose and couplings.

Special convex reel wheels with *wide* rolled edges protect hose. Hose comes *straight* from coupling—*not* sharply bent.

*Optional features at extra cost.

American pioneered the first successful electric rewind hose reel and has continued to increase the fire-fighting advantages of these units.

You can choose hose reels with electric, hand-crank or hand-operated rewinds in keeping with American's policy of giving you a choice of chassis, choice of midship or front-mounted pump, and choice of other features to suit *your* community's needs.

Contact your nearest American representative soon!

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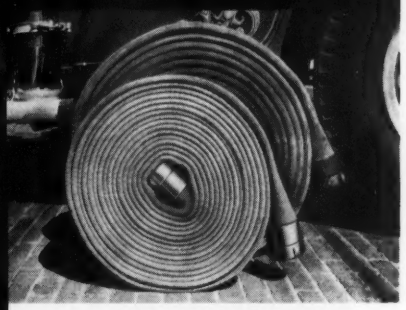

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Which hose is always ready for the next fire?

Unless the white untreated hose is dried within a short time it will be subjected to attack by mildew and rot. This cannot happen to the other hoses. They are protected by Acme-Hamilton's Sealcott "W" mildew resistant treatment. Because the mildew fungi cannot penetrate the cords in the jackets, Acme-Hamilton hose is always ready for service.

Energy 600-lb. test hose treated with Sealcott "W" is dependable and easy to maintain. Sealcott "W" penetrates each fiber of both jackets, seals them from mildew and moisture. Energy packs compactly, too. Jackets have Dacron* filler cords which reduce bulk by ⅓, weight by 20%. * Reg. Trademark Du Pont Co.

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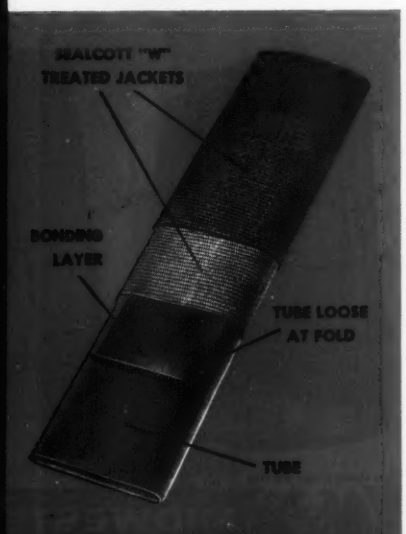

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Safety Clothing for Firemen

The Original STRIPED SAFETY COAT

. . . was introduced 17 years ago and has been a leader ever since its introduction. There have been many imitations and substitutes offered but the ORIGINAL with the YELLOW stripes rubberized into the black rubber has stood the test against the makeshift models where the stripes are glued, sewed or painted on the material.

Protection, Comfort and Service are built into every detail of this coat. Many lives have been saved and accidents avoided in departments where the ORIGINAL MIDWESTERN SAFETY COAT is specified as standard equipment.

COLLAR — Close fitting around neck, up or down. Keeps out water and sparks. Rubberized outside, corduroy inside, cemented firmly so water can't lodge between. Adjustable strap fastener.

BODY — Only 2 pieces — one middle back seam.

SLEEVES — New style with vertical seams. Originated and designed by Midwestern for use in fire garments. Easy to get into fast. Won't tear out when carrying hose or other equipment on shoulder. Flexible, elastic inner sleeve for wrist.

STORM FLAP — 6-inch flap on front of coat keeps out cold and water.

SNAPS — 5 new Midwestern safety snaps.

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MIDWESTERN SAFETY MFG. CO., Mackinaw, Ill.

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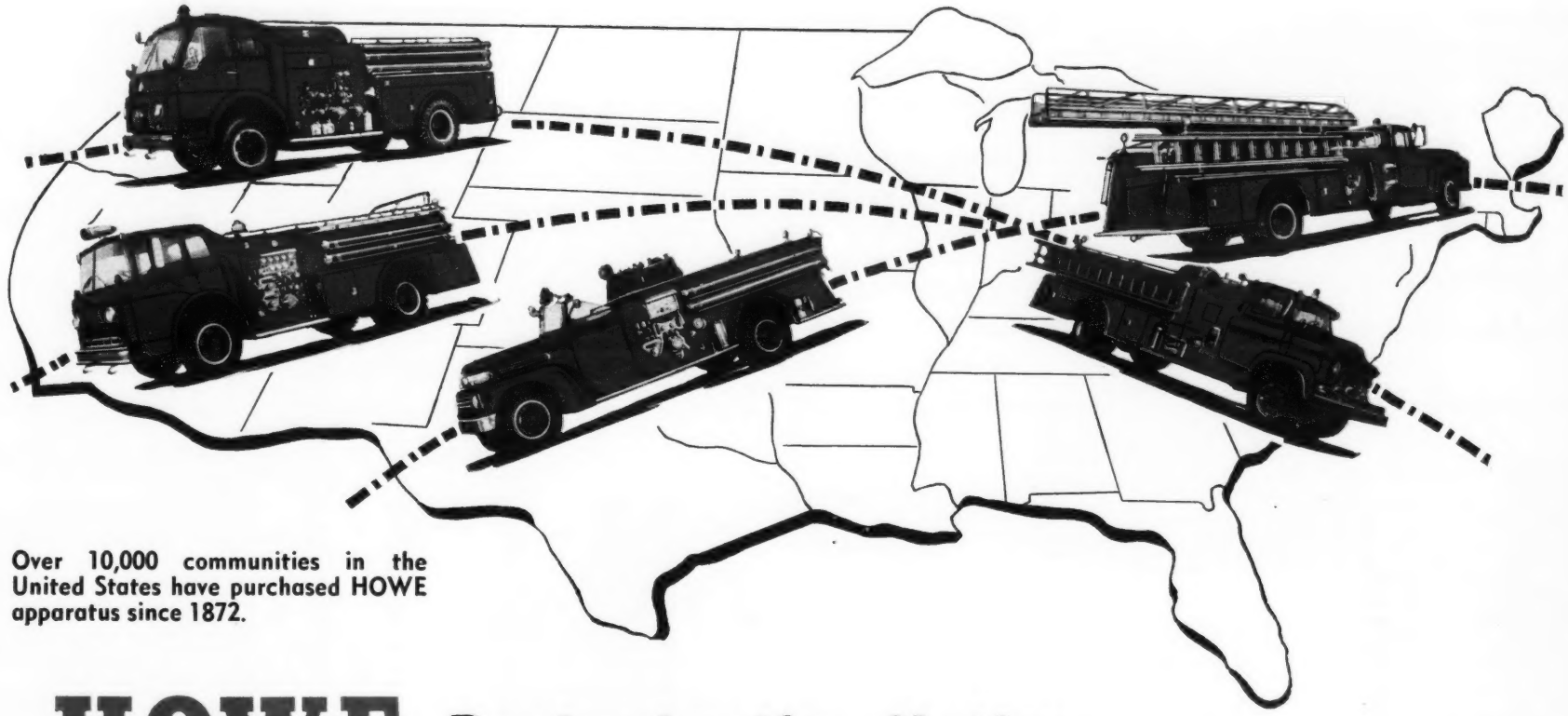

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HOWE Protects the Nation

The impressive record established during four generations proves that HOWE builds fire equipment that **really does a job** in protecting the property and people of our great nation—and HOWE builds to **your** specifications, to suit the special needs of **your** community. Let HOWE equipment protect **you.**

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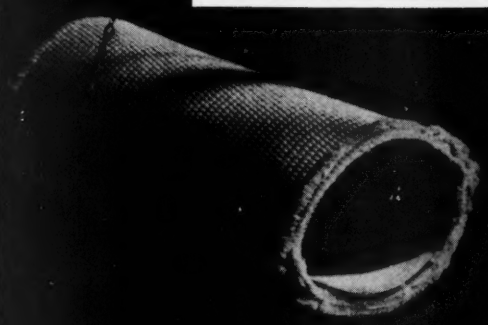

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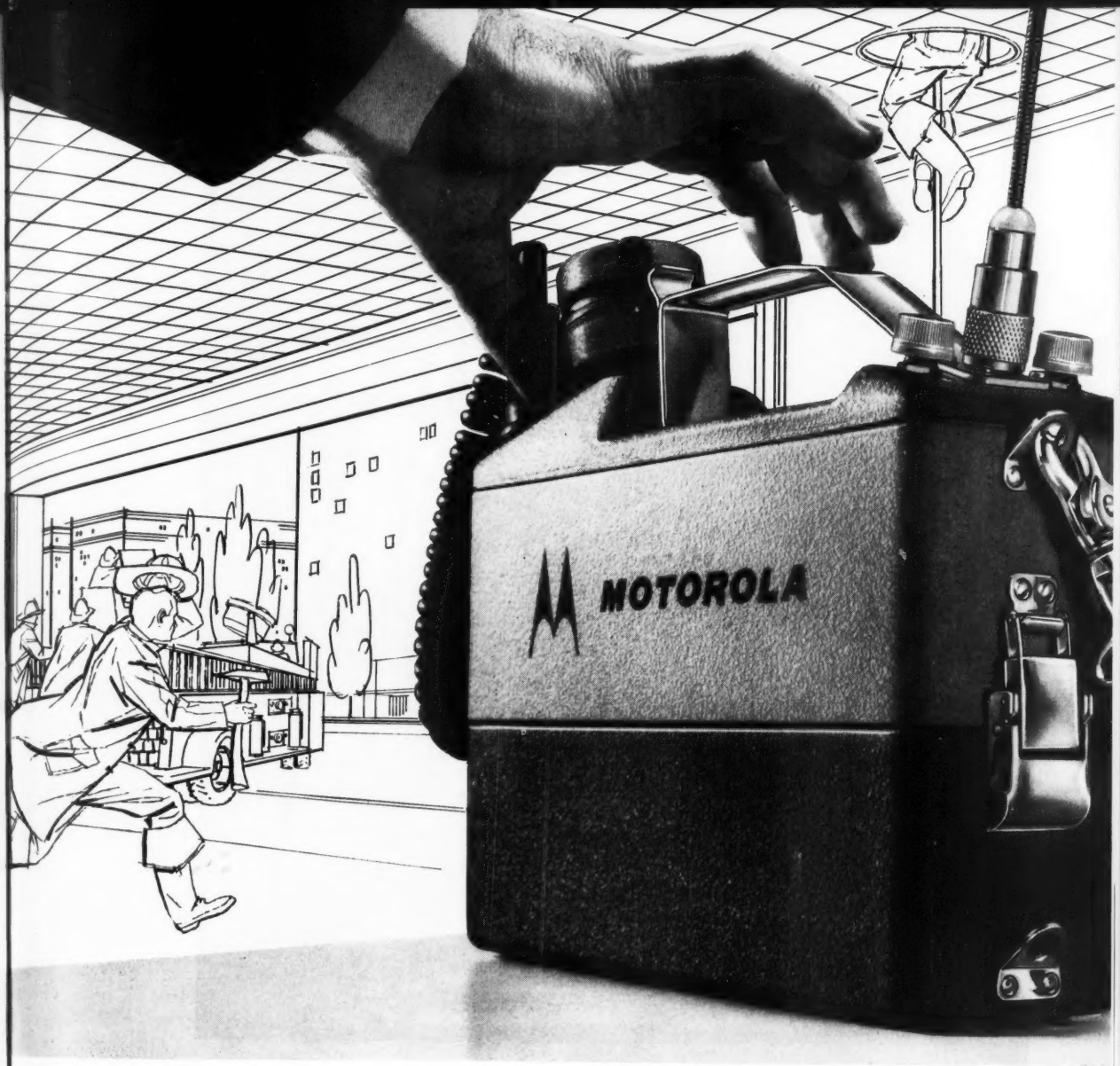

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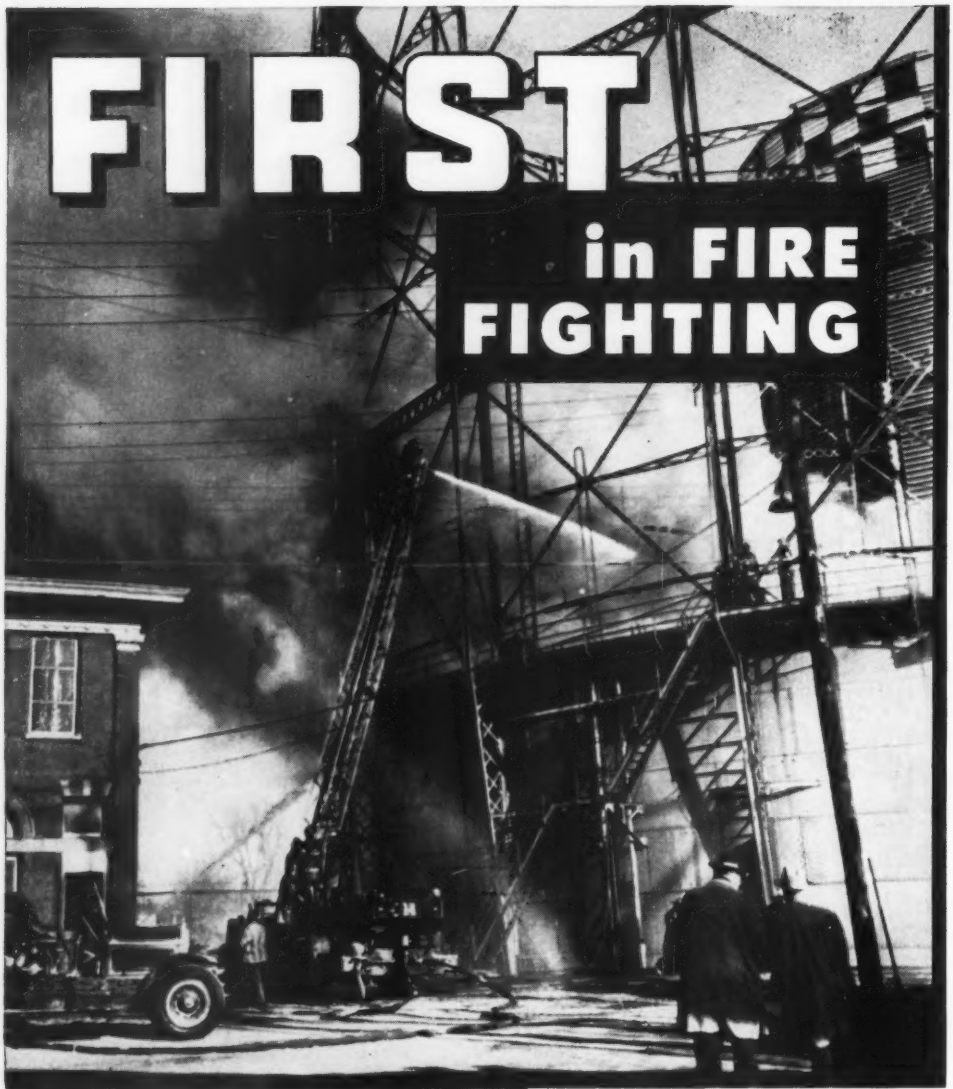

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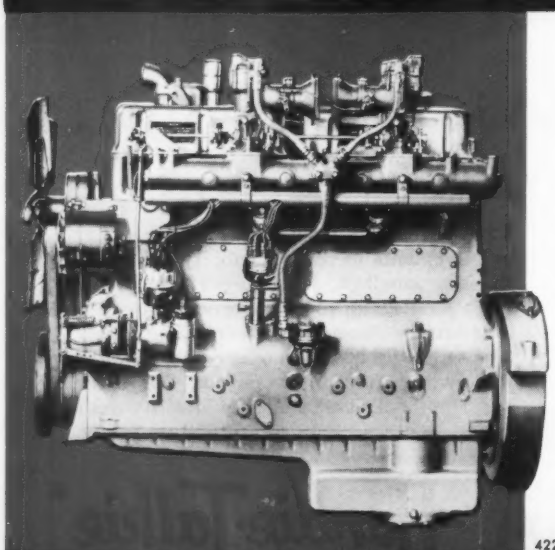

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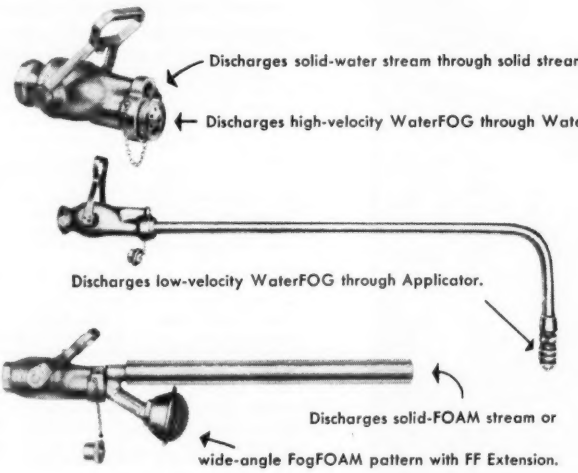
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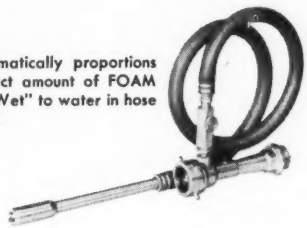

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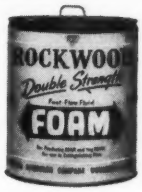

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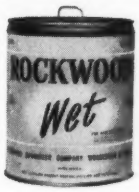

Bayonet Piercing Applicator

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Epitaph for Disaster

They have taken away the scorched desks. Even the more fortunate children don't talk about it any more. And Chicago parents try not to think of it now. Everyone wants to forget. Wanting to forget is natural. But fire doesn't respect human nature — it trades on it!

Fire disaster such as this strikes again and again because of short memories. It feeds on forgetting. And tragedy is its result. So The Gamewell Company reminds you . . .

If you are concerned with the safety of your children in your community's schools, have your Fire Chief, or School Board Official contact a Gamewell engineer. He is a highly trained expert in fire detection who can give you information and examples of fire alarm installations. And he will survey your buildings at no obligation to you.

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FIRE
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THE JOURNAL OF THE FIRE PROTECTION PROFESSION SINCE 1877

VOL. 112, NO. 4 APRIL, 1959

Fire Research a Necessity

Whenever the word "research" is employed, most people immediately think in terms of laboratories, scientists and engineers. In the fire service it is common to identify Underwriters' Laboratories and Factory Mutual Laboratories with this term since much of the published information and rating standards concerning fire behavior of materials is based upon their findings. However, there are many additional research sources available in this country including individual fire departments and fire service agencies.

The effort of the forestry people to develop more effective methods of combating brush and timber fires is a spectacular example. The findings of the tests conducted by them have proven to be invaluable especially in California where the scourge of early winter fires annually destroys thousands of acres of valuable watershed cover and frequently involves the homes of hundreds of people.

Another example is the work being done by the Odessa, Tex., Fire Department located in a petroleum-producing area. Here a small fire department is doing excellent work exploring the unknown characteristics of oil field fires and finding solutions to the many problems which may face it and similar departments whenever it responds to an alarm. Its slogan is "Let's find the answer!"

Similarly the New York Fire Department is stressing research in many areas of its operations. Recently statistical analysis pinpointed a new approach to fire prevention. Careful study of its fire records disclosed that nine of its 47 battalions accounted for more than 45 per cent of all fire calls. As soon as these facts were established, a full-scale fire prevention campaign was directed to these areas. This is tailored to the conditions peculiar to the general construction and occupancy and stresses heavily the education of the public.

Chicago has been experimenting for some time with hydraulic-lift aerial platforms as a modern substitute for the water tower. These units are employed at actual fires and performance is then evaluated in an effort to reach definite conclusions concerning practical applications.

The excellent work of the Exploratory Committee on the Application of Water has done much to further the proper use of fire streams during extinguishment. Much remains to be done, but in a very few years the members have stimulated a large segment of the fire service to intensive study along the lines suggested by the committee.

These examples are by no means the sum total of the fire service effort. Day by day, from our east coast to the Hawaiian Islands, from the tip of Florida to Alaska, similar projects are being carried on by fire departments large and small and by individuals within or closely connected to the field.

In most of the cases cited, funds for making the original studies were either extremely limited or practically nonexistent and only regular operating personnel was employed. This appears to be in direct contrast to the tactics employed by business. The emphasis which American industry places on research is worth serious study by the fire service. Better products tend to increase sales and in our competitive economy, product improvement must be constant if a business is to survive. As a result, millions of dollars for research are budgeted annually by companies striving to remain in the forefront. The competition facing the fire service is deadly—it destroys life and property when permitted to gain an advantage.

A dictionary definition of research states it is a careful search, a close searching, a critical and exhaustive investigation having for its aim the revision of accepted conclusion in the light of newly discovered facts. This statement points up to the fire service that the field is wide open, for it has, by necessity, operated extensively on accepted conclusions in the past.

The pace of our present-day living is being rapidly accelerated by new discoveries and new materials, themselves the result of research. In many cases there is no experience upon which to base sound conclusions concerning fire extinguishment in such products. Only intensive research can provide the answers to questions which will soon be facing fire officers. In many areas of operations these answers will be obtained only if the fire service initiates the search itself.

Wm O'Brien

A Challenge at Hand

Fire Protection in . . .

The author applies foam to exotic fuel fire as Institute engineer operates proportioning controls. Test chamber permits study of hazardous fuels with relative safety to enable interpretation of results in terms of large actual fire experiences—*MRI photo*

By LESTER A. EGGLESTON

THE AUTHOR graduated from Cornell University in 1931 with a degree in electrical engineering and in 1948 received a Master's degree in chemical engineering from Columbia University. A registered professional engineer and a member of the Society of Fire Protection Engineers, he joined the U. S. Fire Protection Engineering Service, Inc., Kansas City, Mo., in 1957 as a senior engineer, initially participating in a worldwide survey of U. S. Air Force fire protection problems. His experience includes service with Esso Research and Engineering Co., E. I. duPont de Nemours and National Aniline and Chemical Co.

THE AGE of scientific fiction come true is upon us and with it has come a new dimension in fire protection. Not too many years ago, the idea of traveling around the world in 80 days was considered nonsense. Those "in the know" said it couldn't be done. Air Force planes now accomplish this in half the number of hours and the feat arouses only momentary interest.

Author Jules Verne wrote *Twenty Thousand Leagues under the Sea* as a scientific novel. As far as he knew, it was simply an exercise in literary imagination. Recently the submarine Nautilus made this story seem like a prophesy at first, then far exceeded it.

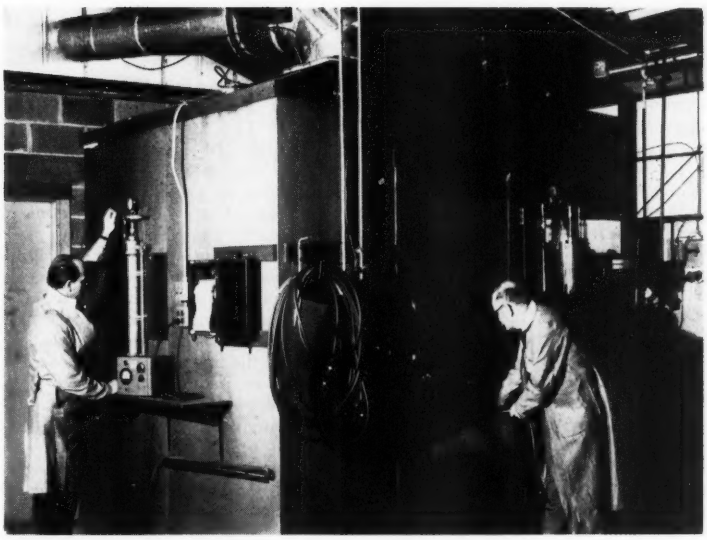
Since the first Russian Sputnik was hurled into orbit late in 1957, we have learned to accept as routine the satellites which have since been launched. Every few months we read of another step forward in the conquest of space. All the satellites have carried radio telemetering and Atlas, the flying chatterbox, was the first space radio relay station. It was a major communications achievement, but only for a few days did it receive headlines in the newspapers. The marvel of today is commonplace tomorrow as the novelty of such things fades quickly. Learning how to live with them takes far more time.

Scientific advances such as these have required the harnessing of tremendous amounts of energy. What we have already witnessed is just a start. As surely as tomorrow follows today, man, spurred on by military and competitive rivalry, will utilize greater and greater concentrations of energy in his conquest of space. Along with this massing of energy will come many serious hazards which we are currently unprepared to meet. At present, we have neither the attitude nor the tools.

New methods needed

Judged by the progress which has been made in other fields, fire protection is still in the horse and buggy age. We still rely on overpowering fires mainly by sheer weight of water. For ordinary combustibles this works, and works well, and our protective system is based upon it.

the Age of Missiles



Special test facility constructed at Midwest Research Institute for experiments to determine burning characteristics of high energy boron fuels. Study of fire extinguishing techniques was made under Air Force contract—*MRI photo*

Often the water damage may exceed the fire damage, but this has to be accepted along with the basic brute force technique.

The most common sort of fires have not changed in their character over the thousands of years man has been civilized. More people are burned to death now, and more property is destroyed, but the burning of paper, wood, and cloth is the same as it always has been and it can be expected to remain so. The need is not to junk what we have but to modernize it.

Fires not average

The fires we must learn to cope with in the developing missile age are not what we can consider average. They involve greatly increased concentrations of flammables, and many variations in the way they burn. In some cases, the uncontrolled energy release far exceeds the capabilities of any extinguishing system we can provide. We must face the dangers of violent explosions in fire fighting. Some extinguishing agents give off toxic gases when decomposed by the heat of fires. Others react with the burning material and create a new hazard by their use. One new propellant fuel is so toxic that the small amounts absorbed by water in contact with it may seriously contaminate areas well beyond the fire zone.

All nuclear applications are carefully engineered to "fail safe," but if a fire occurs, heavy metal vapors may be almost as dangerous as a small nuclear explosion; radiation exposure is always a potential factor. So far, our technology has been concentrated on new accomplishments. We now need the same high calibre of effort in dealing with the hazards these accomplishments have brought with them. We must develop far more than new ways to squirt more water!

Just what form this needed effort will take is uncertain at the moment. Basic fire research is hampered by a lack of obvious, definite things to research. The problem is so broad that most of the fundamental work to date seems only to nibble on the edge. It is complicated by the extremely variable nature of fire itself. Since tangible results are difficult to promise, the research dollar is often directed elsewhere.

In safeguarding life and property, we are not overly concerned with ordinary combustion, where fuel and some oxidizing agent (usually air) are brought together under controlled conditions and the heat released is used as intended. What really concerns us are the unexpected situations where something which will burn escapes and catches fire under conditions with which we are unable to cope.

To study such fires, we must reduce the unexpected situation to a routine one so we can duplicate conditions. The problem may be compared to studying a wild beast without making it tame in the process and destroying its character. We cannot rely on always being able to overpower a fire. The real solution is to discover its weaknesses, then effectively attack them.

Years ago, when the popularity of the automobile started the petroleum industry on its phenomenal growth, the storage of gasoline and other oil stocks in large quantities created a very real flammable liquids hazard. That was met by the development of chemical foam and application techniques. We now have mechanical foam plus the know-how to use it effectively, and the storage of petroleum stocks in reasonable amounts no longer constitutes any unusual problem. This is not to say that the fire risk has been removed from the oil business. The storage and handling of flammables is never completely safe from human error, so some fires must always be expected. With foam as an effective weapon, however, the petroleum fire need not be the scourge that it was once considered.

Fire fighting foam is simply a sophisticated and highly efficient way of cooling and smothering a fire. Some may wonder why the same approach cannot be used for the propellants used in the missile field. The answer lies in the extremely reactive nature of such fuels and the concentrated energy they represent. Mixed in exactly the right proportions, the fuel-oxidizer combination must operate in a very simple engine, deliver a tremendous amount of power, and drive the missile faster than an artillery shell. In effect, a missile launching is a carefully controlled explosion. Once started, explosions are difficult to stop. If control is lost, there is little or no time to do anything about it, and little which can be done.

Water and personnel problems

The classic fire triangle thinking teaches us to cut off the supply of fuel, to cool below the ignition temperature, or to cut off the supply of air. The first will always work if it can be accomplished. The second is often attempted, but such large quantities of water are required in such a short time to be effective that inertia is a real factor. A rocket engine testing site, for example, might require a water flow of 30,000 gallons per minute. A flow of this magnitude takes time to establish.

Unless water is flowing before the fire, all the damage might be done before water could be made effective. Starting the water is part of count-down procedures and certainly the missile stand is protected at the expected point of flame impingement. If, however, the missile topples or falls back in a misfire, the chances of using the main water supply are pretty small. There just aren't enough hose lines and men to put 30,000 gpm into a given spot in the time available. At present, damage to the missile has to be accepted. The only safety to personnel lies in distance and concrete

Continued on page 302

A modern application of "power" and mechanization

Use of Aircraft in Forest Fire

By ROI B. WOOLLEY

ANYONE who has observed developments in forest and field fire control and extinguishment during the past decade cannot help but note the extensive use of power in practically every phase of operations. From discovery and notification, to response, reconnaissance, attack, major and minor fire line techniques, mop-up and support, mechanization has played an increasingly important role.

This by no means is intended to imply that the man on the fire line is not supreme. Most authorities agree that mechanization will never completely remove forest fire fighting from the category of a "hard, dirty job." Those who have seen what power equipment in the air and on the ground will do, believe it promises to bring about more rapid control, thus reducing areas burned and at the same time lessening tremendously the amount of hand labor necessary to complete extinguishment.

Fire fighters take to the air

Probably the most outstanding development has been the broadening and dramatic use of aircraft. As early as 1931, the U. S. Forest Service contemplated the use of airplanes and parachutes to speed attack on forest fires. However, nothing much came of it until 1939 when the first comprehensive experiments were conducted.

Writing in a 1940 issue of *Aero Digest*, D. P. Godwin, assistant chief, Division of Fire Control, U. S. Forest Service, suggested, "If we can intelligently adapt transportation by air to our ends, it may open up an era of time-cutting which our present forest fire organization plans have hardly glimpsed."

Mr. Godwin urged the application of parachute-jumping to overcome the travel-time problem of reaching disastrous back-country or inaccessible fires. It was through his efforts that what are said to be the first experiments in smoke-jumping were undertaken by the U. S. Forest Service in 1939. At that time the Service purchased a Stinson SR-10 fitted out especially for fire control experimental work. The plane was assigned to Region 5 (California) and used in early fire-bombing experiments in that area.

In 1939 bombing experiments were dropped and the decision made to try out the delivery of fire fighters to fires via airplane and parachute. These tests suggested that such delivery could be made and without injury to men engaged in such work. This led to a determination to conduct smoke-jumping operations in 1940.

The first actual fire-jump was made by Rufus Robinson at 3:57 p.m. on July 12 of that year, in connection with initial attack operations in the Martin Creek Fire, Nezperce National Forest. Region 1 of the U. S. F. S. estimated the total cost of smoke-jumping operations during 1940—including personnel, depreciation on equipment and flying—was $9,047. It was estimated that the nine forest fires controlled by smoke-jumpers would have cost $32,270 if ground crews alone had been employed.

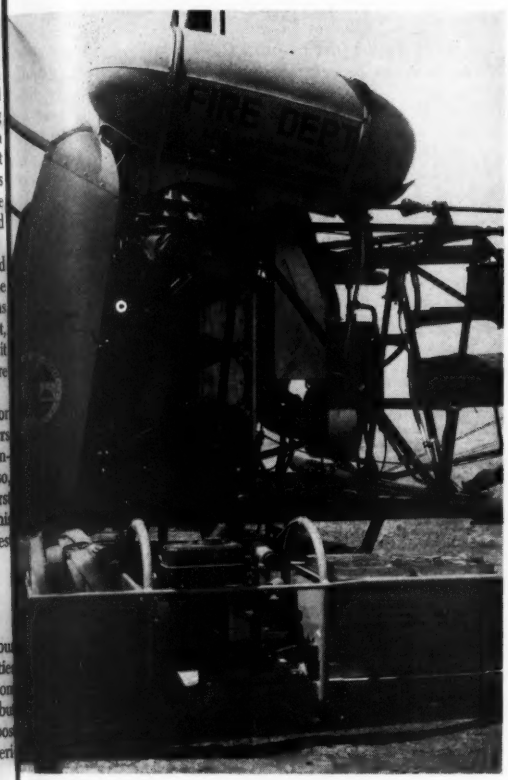
During World War II only limited smoke-jumping was continued, due to the manpower shortage. Experience was gained however, by those who stuck to it, and in the years following the war, it became more of a fixture in forest fire fighting.

In 1948, the helicopter was used for the first time to return smoke-jumpers from back-country areas to places of immediate access. It is worth recording also that the helicopter that year saw its first use in initial attack on a forest fire. This was in the Snoqualmie National Forest blaze.

Air tankers—a new tool

It was back in 1920 that serious thought was first given to the possibilities of fighting fire by dropping water from aircraft. The idea failed to germinate, but in 1936, the proposal received a big boost when extensive aerial-bombing experi

PBY's tanks are loaded with borate solution during forest fire attack phase as converted TBM approaches for reload—*L. A. County F. D. photo*



Helicopter carries portable pumping unit, along with hose and spare fuel, to remote locations for ground crew
—*L. A. County F. D. photos*

What Air Tankers Can and Cannot Do

Experiences during 1956, 57 and 58 with tankers leave no doubt that water or a water and sodium-calcium-borate mixture, dropped free-fall from aircraft, can have significant effect on grass, brush and timber fires. In the 1958–59 Pacific Coast holocausts they were credited with actually saving structures. It has been demonstrated also, that borate because of its retardant qualities does a better all-round job than water. However, air tankers with water alone, say leading forest fire fighters, can knock down fires in light fuels such as grass and young chamise. Here are some of the jobs they say air tankers *can* do*:

1. Hold a small fire until initial attack forces arrive

2. Cool down hot spots so that men can enter the area and work safely

3. Knock down spot fires.

4. Build a fire-retardant line with borate in advance of a fire or where men cannot work

5. Reduce the probability of crowning

6. Strengthen existing fire lines

7. Directly support ground forces who are actively engaged in line construction

8. Fireproof local areas where spot fires are probable, such as exposed slopes in steep canyons

And here are some things air tankers *cannot* do:

1. Knock down hot rolling brush or timber fires

2. Safely make drops in high winds (over 30 mph)

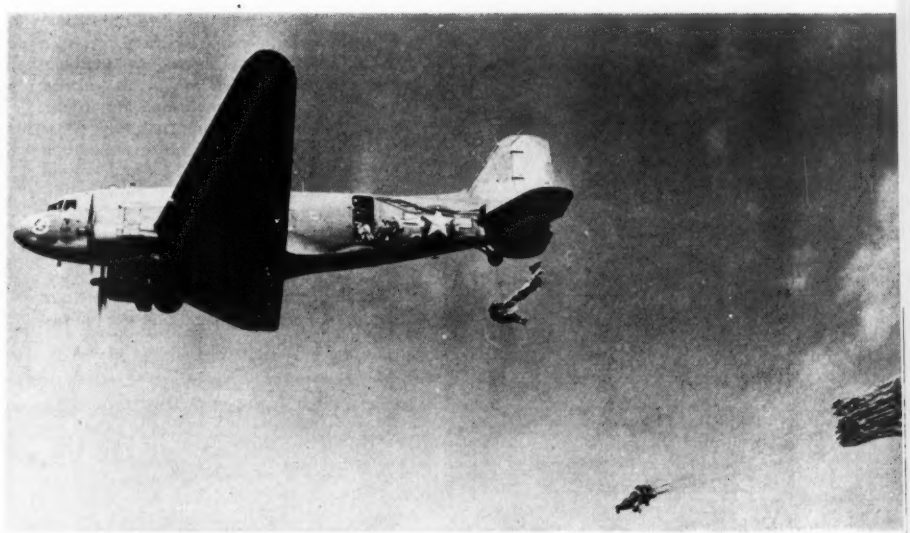
3. Make drops in the bottoms of steep canyons or other inaccessible places

4. Cool down hot fires in heavy fuels under timber stands

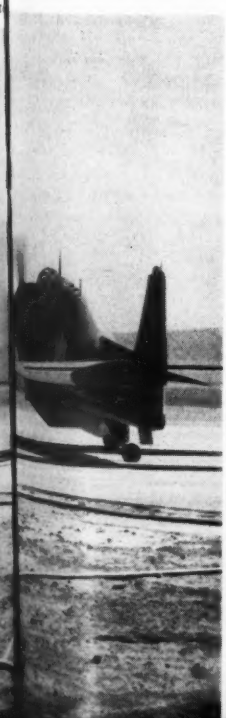
5. Work at night

* Forest Control Notes, Forest Service, U. S. Department of Agriculture, Vol. 18, No. 3, July 1958.

ire Control



"Smoke Jumpers" leave transport plane to attack forest fire during 1945 "Operation Firefly" conducted with cooperation of 555th Parachute Infantry Battalion



ments were conducted in California by the Forest Service.

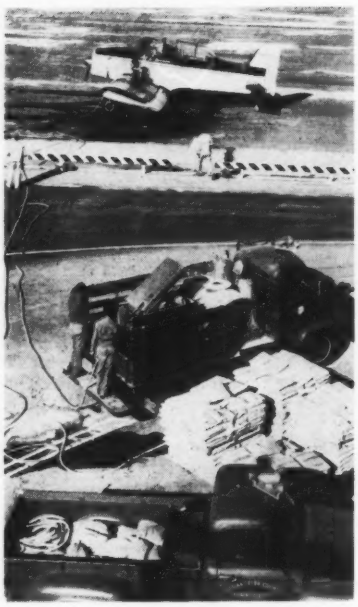
Many students like to think that modern air attack started with "Operation Firestop" in 1954, when the possibilities of "powerizing" forest and field fire attack through adoption of all sorts of new tools, methods and techniques were studied in Southern California. During this one-year crash program (see FIRE ENGINEERING, October 1954), helicopters were used to transport and stretch fire hose, carry helitanks, fan backfires and attempt other tasks heretofore foreign to forest fire control techniques. At one of these experiments a Navy torpedo

bomber dropped 600 gallons of water from its bomb bay on a test fire.

Operation Firestop, if it did nothing else, demonstrated the possibilities of applied power in the air and on the ground to further the science of forest and field fire suppression. Then, in 1955, the Mendocino National Forest demonstrated that a low-flying crop-duster plane could carry and drop as much as 120 gallons of water at a time. Subsequent trials on wildfires showed that the air tanker could be further helpful to the ground forces. In Canada, water drops were tried out, using a hydroplane which scooped up its own water.

Tanker trials were sufficiently promising to warrant the addition the following year of a fleet of seven agricultural-type airplanes to the California fire fighting forces. These planes fought 25 fires along the Pacific Coast using sodium calcium borate and plain water. Air support was a deciding factor in assuring control of 15 of the 25 fires, and greatly aiding ground forces on five others. The result was a further broadening of the use of converted commercial and military planes, utilizing borate solutions. Still later, specially designed and built aircraft were introduced and placed in service (FIRE ENGINEERING, January 1957).

Thus the hard-pressed forest fire fighters found a new, powerful striking arm—



Ag-2 aircraft designed for agricultural-forest fire purposes takes on load of borate during test operations in California. Plane, certified by CAA, was first used at Santa Monica Mountain Fire in 1956

—Transland photo by Johnny Ramos

in fact, combined with the helicopter, they found *two* arms.

Operational handicaps

These innovations also presented some difficulties. It became necessary to revise many of the accepted fire control methods and techniques with which the Forest Fire Service had practically grown up. The particular problems that had to be resolved included fire control cooperation and coordination between air and ground forces; scientific control of aircraft—including helicopters—engaged in size-up, reconnaissance, transportation and actual fire fighting with chemicals and water.

It took many fires and the loss of aircraft and valuable pilots to demonstrate the need for reshaping forest fire control tactics to conform to this "age of mechanization."

Just as with the advent of the jet airliner in the commercial field, it became necessary to take a new look at air traffic and control; so too, the introduction of these many different air units into fire fighting has called for complete revision of air control on the fire ground, and we might add, in the "fire air."

The story of every major—and many minor—California forest and field fire is not complete today without some reference to air attack and support of ground fire forces. Smoke, heat and gases, together with weather, topography, lack of airports and heliports, difficulties of supply, and lack of trained manpower, presented new handicaps that have had to be overcome. Fortunately, the air arm of the Forest Service, notwithstanding meagre funds for development, is building up a strong, well-knit and well-trained air striking force which has already proved its worth in the saving of valuable timberlands and watersheds.

Today, on almost any large-scale West Coast operation, there will be a number and variety of aircraft over and around the fire: Tankers, shuttling back and forth from base airport or heliport; speedy aircraft scouting fire progress and leading in the "drop" planes; command helicopters serving as general headquarters; big transports bringing in out-of-state aiding forces; helicopters dropping down to heliports to deposit men and supplies, pick up casualties and to move "hot shot" crews.

Many believe that of all the aircraft, the helicopter has had the greatest impact upon fire fighters and fire suppression methods.

The helicopter pays off

The helicopter, introduced to the nation's fire fighters in California in 1947, has demonstrated certain effectiveness in reducing the time interval between fire detection and initial attack and in helping hold defense lines, and to otherwise contain dangerous fires in operations of considerable magnitude.

Efficiency in their use is constantly be-

Continued on page 304

Above: Los Angeles County Fire Department helicopter works with engine company as line is stretched up canyon. Coordination between land and air units has speeded attack on brush fires

Right: TBM bombs fire approaching crest of hill in effort to slow down speed of travel while men on left build line and stretch hose toward blaze—*L. A. Co. F. D. photo*

David L. Harrington, 1959 Crusade Chairman of the American Cancer Society, and Mr. and Mrs. Edward Ney and daughter, of Darien, Connecticut, who were the models for the poster "Guard Your Family," shown in the background

Hitch Your Mousetrap To a Cause

By DAVID L. HARRINGTON

National Chairman of the 1959 Cancer Crusade

MR. HARRINGTON *is chairman of the board and chief executive officer of the Reuben H. Donnelley Corporation and president of the Illinois State Chamber of Commerce.* FIRE ENGINEERING *is published by the Business Papers Division of the Donnelley Corporation.*

ONCE UPON A TIME the man who made a better mousetrap didn't have to look for customers.

But in 1959 the best of all possible mousetraps won't sell without a skilled publicity campaign to tell the people —and sometimes also the mice—that this indeed is the trap of the future, a superior product for discriminating mice and men. Generally this is costly. And generally it's worth the cost.

Some years ago, however, I accidentally discovered a way of securing consumer goodwill at no dollar cost. And I consider this an excellent supplement to our regular public relations program. Eight years ago, without thought of profit or mousetraps, I became a volunteer for the American Cancer Society. Looking back, I suppose I joined because I was asked to.

My father, who was my dearest friend, had died of cancer. Watching him die wasn't easy. Then there was my secretary — a dynamic young woman whose life was snuffed out by cancer in a few short months. These experiences might have led me to feel that you can't do anything about cancer; but there was also my dear friend and fishing companion, Jack Holland. He was operated on for lung cancer eight years ago. Last year we went on a pretty rugged fishing trip to Alaska. Jack held his own. This year, business and the Cancer Crusade permitting, Jack and I hope to catch a couple of big ones off the Isle of Pines in the Caribbean.

My friend Jack is one of 800,000 Americans cured of cancer. They owe their lives to the American Cancer Society's nationwide network of research, service and education programs.

The Society devotes millions of dollars to research. It needs many millions more.

Most of the 30 million dollars contributed to the Cancer Crusade last year came from small donors. Business and industry failed to give their full fair share. And this despite the fact that cancer costs business and industry *billions* a year in absenteeism, in lost goods and services, lost buyers and in indirect costs for medically indigent patients.

Here are a few facts every business or professional man should know. Fifty thousand man-years are lost each year to business and industry through cancer disability. The disease causes more prolonged absenteeism than any other illness. The annual hospital bill for cancer is 300 million dollars a year, excluding home care and follow-up treatment. Cancer cre-

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Fire, which occurred in box of contaminated waste from action of nitric acid on paper towels, was detected and extinguished before there was much spread of contamination —*A. E. C. photo*

FIRE HAZARDS OF ATOMIC REACTORS

By OTTO F. KARG
Fire Chief

and

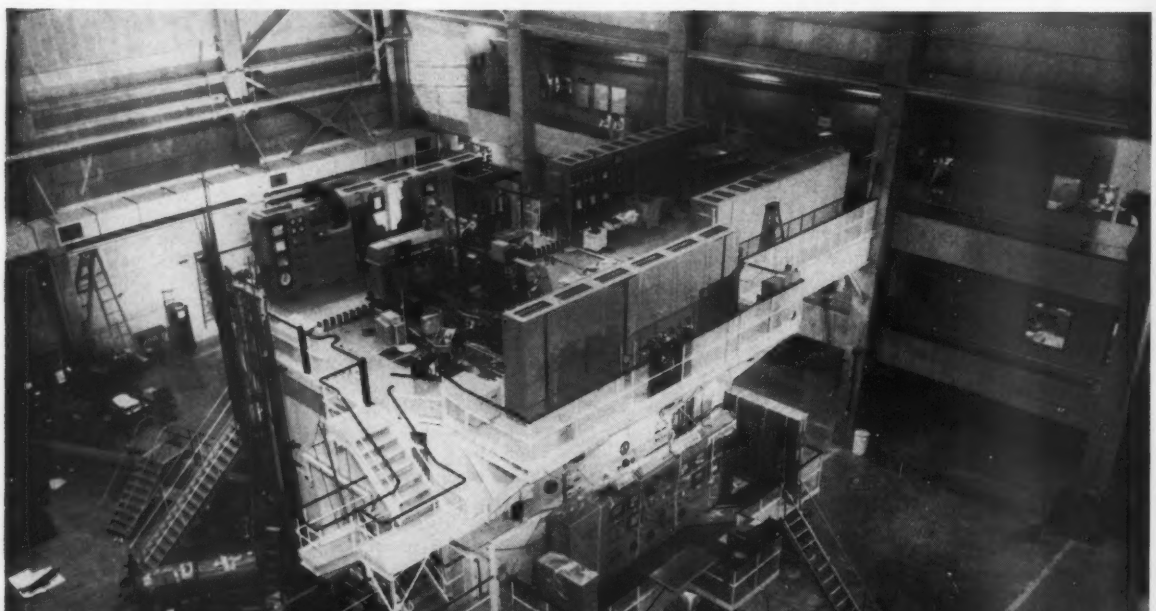
EDWARD PATTERSON
Fire Protection Engineer

Safety and Fire Protection Branch
Idaho Operations Office
United States Atomic Energy Commission

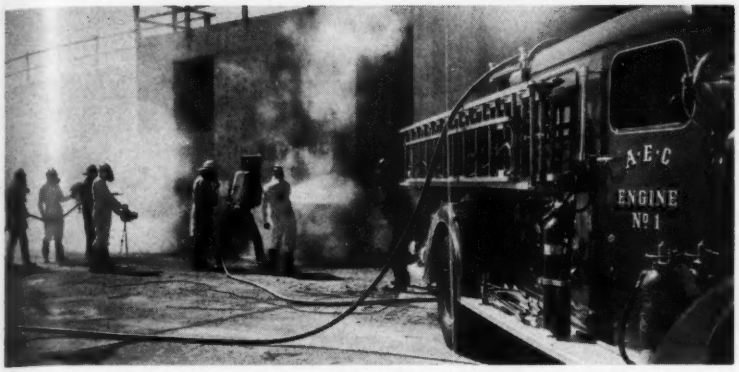
THE INCREASED application of nuclear energy to all phases of modern living will soon create new problems for the fire service. At present several commercial installations of reactors are being constructed or planned and it is important that firemen learn some of the hazards which may present themselves in the very near future. Nearly all of the experience to date has been accumulated by the United States Atomic Energy Commission and this article will deal with one government installation.

The National Reactor Testing Station occupies a 431,000-acre tract of sagebrush land in Southeastern Idaho. It is a place where the A.E.C. builds, tests and operates various types of nuclear reactors. Since its establishment in 1949, 12 reactors have been built and operated at the station and 10 more are in the design or construction phase. Its size and remote location permits scientists and engineers engaged in nuclear research to carry on experiments vital to the Commission's program, with minimum public hazard.

One of the hazards which must be considered is the possibility of a fire in a reactor plant. While there are many



A materials testing reactor at Idaho Falls. Rolls of blotting paper, wooden boxes containing paraffin, protective clothing (top of reactor) and containers of contaminated waste are identifiable—*A. E. C. photo*



Idaho Falls A.E.C. fire fighters attack fire involving radioactive material. Note use of high pressure fog, breathing equipment and radiation detection instruments—*A. E. C. photo*

unique theoretical possibilities, most of the fire experience has been due to the materials and conditions which have long been known in industry. However, the possibility of a fire which may result in a nuclear incident or be the cause of release of radioactive material cannot be lightly brushed aside.

In studying the fire hazards of atomic reactors, it is necessary to know some of the fundamentals. A reactor consists of a shielded assembly of fissionable materials, equipped with devices to control the rate of nuclear fission. The fission process produces neutrons, radioactive particles and heat. Except for some low power critical facilities, reactors are provided with a medium to remove the heat. It is in this heat transfer medium that fire hazards may arise.

There are many possible arrangements and types of reactors, but to simplify hazard estimates, two basic subdivisions have been made to cover reactors at the National Reactor Testing Station:

1. **Research and Testing**—This grouping of reactors applies primarily to those which produce neutrons or other radiations to be used for research and testing of components, coolants, and materials of many kinds. The Materials Testing Reactor and the Engineering Test Reactors are of this type.

2. **Prototype and Experimental Reactors**—In this type the performance of the reactor itself is tested.

The Research and Testing Reactors are not necessarily in themselves a fire hazard. However, we feel this type of operation presents a high hazard. Operations of these plants are somewhat similar to chemical pilot plants; experiments and samples of all types are run into the reactor.

Flammable liquids and gases, sodium, NaK and other pyrophoric metals are used and large quantities of paraffin and wood are employed for neutron shielding. Small spills of radioactive materials call for extensive cleaning (not just wiping with a mop) requiring the use of rags and absorbent paper. Blotting paper is purchased by the ton and used on floor and work benches, to absorb stray radioactive particles. When working in contaminated areas, employees are required to wear special clothing to protect themselves and their street clothes from becoming contaminated. As a result, large quantities of coveralls, aprons, shoe covers and gloves are stored in reactor buildings.

Reactors in the second grouping do not have the fire hazards associated with the research and development type. This includes the so-called power reactors which are run on a routine basis and it is possible to design safety into the plant more readily. There are usually no experiments inserted in these reactors. Runs are made with varying conditions to determine the behavior characteristics and capabilities of the machine. Changes may be made in fuel elements, control rods, moderators, reflectors, etc.

In these plants the testing of the reactor is the central object and everything revolves about this. It would be similar to the testing of any large heat-producing device. The fire hazard is then based on the hazard associated with the reactor. This is due primarily to the material used as a coolant, and we have made a further breakdown of hazards under this general type:

1. Water or nonflammable-gas-cooled reactors are a low fire hazard.

2. Air-cooled reactors are considered to be a moderate fire hazard. Until recently it had been thought that these were a low hazard, but incidents with pyrophoric metals have shown that this position is not valid.

3. Organic-liquid-cooled (or moderated) reactors and liquid-pyrophoric-metal-cooled reactors must be considered as high fire hazards. While the materials used are not normally considered to be highly hazardous, the operating temperatures are usually well above the flash point, or even the ignition point, and a leak results in an immediate fire.

A fire in a reactor facility presents all the problems which may have to be faced in any fire plus a potential radiation hazard. Radioactive gases or air-borne particles will present an ingestion hazard and a contamination problem, while exposed sources create a direct radiation hazard. The hazard may be different from time to time, depending on the power level of the reactor and the length of time it has been in operation.

It must be emphasized that radioactivity cannot be seen, smelled or felt. It is not possible for a fireman to start attacking a fire where this hazard exists, and to depend on his senses to keep him out of trouble. It is extremely important to plan fire fighting procedures for reactor installations and to have trained personnel available with instruments to advise the officer-in-charge of the hazard. It is also desirable that each man be equipped with a film badge to record individual exposures.

Methods of extinguishing reactor fires or fires involving reactor components, of course, depend upon the type of material involved. Pyrophoric metals due to their violent reaction with water require special fire control materials. Class A materials, which in most cases consist of wooden blocks, blotting paper, clothing, etc., are controlled with water fog.

Contrary to the general belief of the past several years, water can usually be used on reactor fires or fires involving radioactive materials, if the material is the type that does not react violently with water. The important point to remember on using water for fire fighting around contaminated materials is to keep the water damage to an absolute minimum, to prevent excessive water run-off which in all probability will be contaminated.

Personnel must be monitored

All personnel must be thoroughly monitored to determine the amount of contamination, if any, they may have on their clothing. In addition, fire fighting equipment must be monitored before being placed back on the apparatus. Materials found to be contaminated must be thoroughly cleaned before they can be returned to use.

Similarly, contaminated personnel must clean themselves before returning to quarters. Firemen who operate in a building where radiation is a problem are not allowed to return to the outside and remove equipment from the apparatus. The pump operator stays outside the contaminated area and passes necessary materials and equipment to the working force.

Fire fighting procedures in reactors and in reactor experiments must, of a necessity, be different than those used in normal industrial type fires, because of radiation problems. Normal fire fighting tactics which include saving of life, protection from exposure, confinement, extinguishment, overhaul and salvage must be changed to (1) saving of life and protection of personnel from radiation; (2) protection of exposures not only from fire but also from contamination; (3) confinement of both fire and contamination; and (4) extinguishment, with utmost regard to the prevention of excess water run-off. □□

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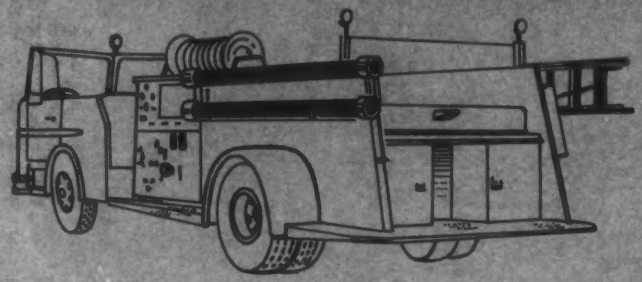

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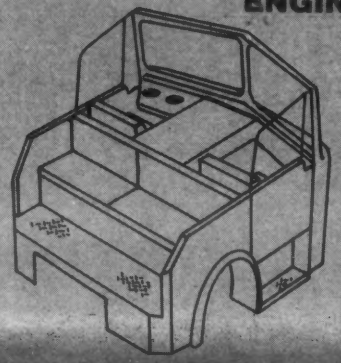

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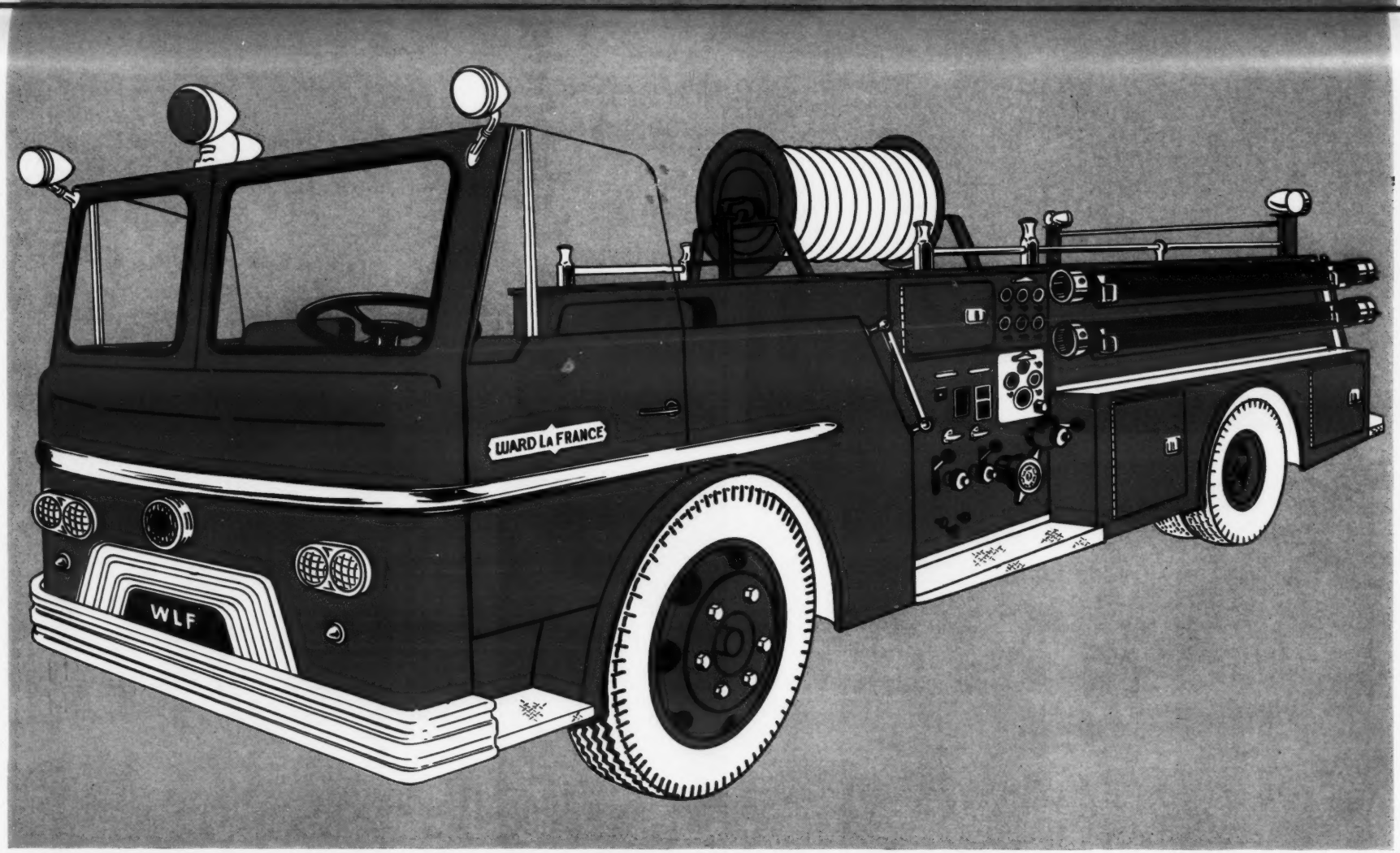

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Chief C. A. Harryman, Arnold Engineering Development Center, conducts demonstrations of liquid metal and rocket fuel fires. Chief Inspector Thomas I. Godfrey, St. Louis Fire Department, and Captain D. E. Mallery, Memphis Fire Department, assist—*Photos courtesy Memphis Fire Department*

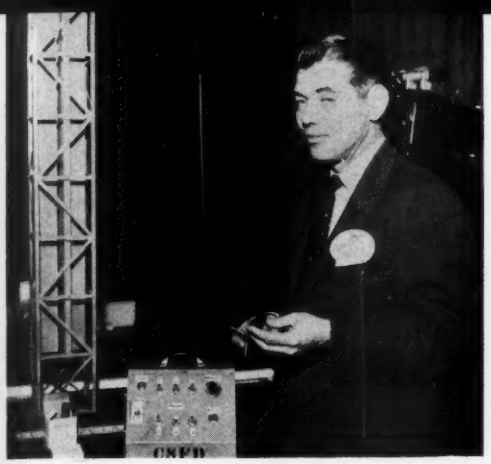
Outdoor fire fighting demonstration involved simultaneous fires in five buildings and posed difficult test for Memphis Fire Department. Blaze was extinguished in 6 minutes and 40 seconds

Captain John A. McCarter (left), Topeka Fire Department, discussed common household hazards through use of model dwelling. More than 25 fires were started in clever demonstration device

Spectators scatter to safety as 3-inch hose bursts during outdoor fire fighting demonstration. High pressure cascaded water over a wide area but fortunately no one was injured

F.D.I.C. Celebrates

Fire fighting demonstration also served as test for new fire-retardant paint. Effect of coating on white building is evident. Burned-out shell of adjacent house was separated by only two feet from painted structure



J. V. Neeson, ground safety director, Norton Air Force Base, Calif., discusses model missile safety. Equipment displayed was designed by Colorado Springs Fire Department

Memphis Mayor Edmund Orgill (right), Fire Chief John C. Klinck and Vice-Mayor and Fire and Police Commissioner Claude A. Armour welcomed the Instructors Conference for its 25th year in the city

Question and answer panel on last day of conference included H. T. Johnson, assistant manager, Illinois Inspection Bureau; Battalion Chief J. R. Kerr, Portland, Ore.; B. H. Wilson, Nebraska state fire instructor; J. N. Cardoulis, fire prevention director, 64th Air Division, USAF, New Foundland; D. M. Baird, assistant director, Fire Protection Engineering Department, Canadian Underwriters Association, Montreal, Que.

Co-Chairman Emmett T. Cox, Western Actuarial Bureau (right) escorts Maryland Governor J. Millard Tawes, to speakers table at Thursday luncheon. Governor Tawes is a past president of Maryland Firemen's Association

Silver Anniversary at Memphis

Memphis firemen received plaudits for excellent lunches served. Speakers included Governor Tawes, Congressman Clifford Davis, former fire and police commissioner of Memphis, and Walter P. Halstead, Minneapolis CD director, and president, U. S. Civil Defense Council

Fire Hazards of Plastics

By FRANK HANIFIN

THE MANUFACTURE of synthetic resins, the basic material of the plastics industry; the fabricating of plastic products and the increasing use of plastics in building construction, all present some fire hazards. In comparison, the finished plastic product normally found in the home poses but little danger. Some examples of the hazards of the industry are covered in this installment.

Five employees were killed and more than 30 injured when a dust explosion and fire destroyed the Makalot Plastics plant in Waltham, Mass., on March 6, 1948. The force of the blast was felt for miles around and many window panes were either blown in or sucked out by the concussion.

The plant manufactured plastic molding powders for use in making dishes, radio cabinets and similar articles. Chief among the round-the-clock operations carried on were: Resin-making, hammer-milling to pulverize the resins and blending to mix the powdered resins with fillers, extenders and coloring materials.

Witnesses said the whole plant appeared to burst into flames at once, shooting an enormous column of flame skyward. Minor blasts followed the first one and in a short time the fire completed the destruction. Damage was estimated at $150,000 (FIRE ENGINEERING, June 1948).

This incident illustrates one of the principal hazards of the manufacture of synthetic resins and the compounding of molding materials, as listed by the National Board of Fire Underwriters in Research Report No. 1, *Fire Hazards of the Plastics Industry*.

Danger of ignition sources

Another major problem in plants of this type, according to the same NBFU report, is sources of ignition in "high" hazard areas (flammable gases, vapors and dusts) such as open flame, static electricity, arcing of electrical equipment, lightning and sparks from metal contacts.

An example of this type of hazard is the recent fire in a plastics plant at Brantham, England, in which one man was killed and two others injured. In addition to making modern plastics, the plant produces a large percentage of the celluloid made in England.

The fire occurred in a department in which nitrocellulose is treated to free it from acid. The nitrated cotton linters are stored in drums, and one of these drums was being emptied into a vat in which purifying takes place. Stainless steel forks are used for scooping the material out of drums. When dry, the material is highly flammable, but it is usually worked in such a damp state that it is not considered to be easily ignitable.

Plant fire fighters using breathing apparatus recovered the body of the dead man. At the inquest, witnesses stated that following a "terrific whoosh," the vat became a mass of flames, and burning nitrocellulose was blown around the department. This caused rapid fire spread along wooden platforms around the vats.

It has not been possible to establish the exact source of the ignition but of several possibilities, Chief Fire Officer H. F. Griffiths mentions the drying out of the nitrocellulose by a steam pipe adjacent to the vat, and ignition by a spark caused by metal to metal friction or even an electrically generated one.

Flammable liquids and gases

Hazards of highly flammable liquids and gases during processing, transportation and storage constitute another danger, according to the NBFU report.

For example, four persons were hospitalized and three others treated at the scene when an explosion rocked the new Wyandotte Chemical Company plant, 14 miles south of Baton Rouge, La., last November 25. The plant employs about 400 persons in the manufacturing of basic chemicals to use in making plastics. The explosion took place in the ethylene glycol section.

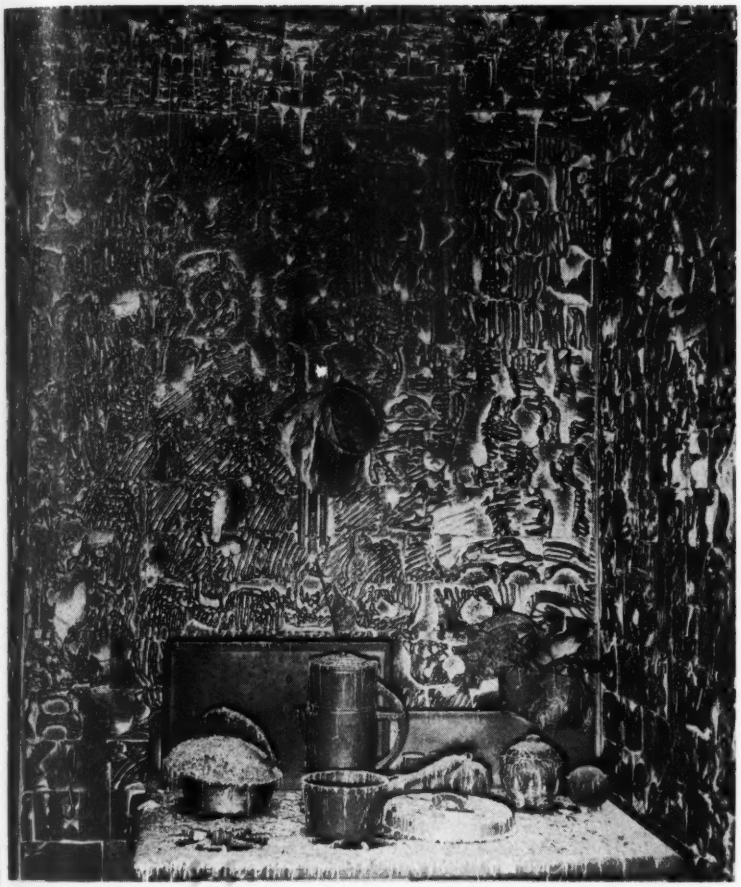
"We have no idea of what happened," the industrial relations manager for the plant said. "It just went boom!" The blast shattered windows in the sheriff's office at Gonzales, about five miles to the east, and was felt in downtown Baton Rouge.

Organic peroxides, sold as solids, liquids and pastes in a variety of concentrations, have in recent years found increasing use as catalysts in the plastics industry, according to the NBFU, and present sufficient hazard to have warranted the National Board to issue a special Research Report (No. 11), "Fire and Explosion Hazards of Organic Peroxides."

This report points out that, "These active-oxygen compounds are vigorously reactive; they present explosion potentials by virtue of their thermal and shock sensitivity and their tendency to undergo auto-accelerative combustion and, in some instances, even violent decomposition. The greatest danger lies in the handling of the many different peroxides by relatively small processors or fabricators who ordinarily may not be fully conversant or appreciative of the hazards that can be presented or who may not know how to cope with them properly."

Other hazards of the manufacture of synthetic resins and compounding of molding powders, according to the Na-

Fire in Plastone Plastic Co., Birmingham, Ala., last December 17, blazed for more than four hours and kept firemen on duty throughout the night. According to Chief Fire Marshal A. Rosenfeld, tremendous quantities of heat and black smoke from decomposing plastic kept the firemen out of the building and resulted in total loss



"It rained fire" when flames reached the plastic tiles on the walls and ceiling of this Rockford, Ill., kitchen. The fire was confined mainly to kitchen, but entire first floor was heavily damaged by smoke and heat from the burning tiles—*Rockford F. D. photo*

tional Board, are: Danger of hazardous chemicals during processing due to inadequate temperature, pressure and reaction time controls; failure of equipment processing hazardous chemicals due to improper design or lack of maintenance; fires caused by operational errors due to inadequately trained personnel or lack of understanding of the hazard potential of the materials involved; rapid and uncontrolled spread of fire in a plant due to improper fire protection facilities, lack of trained fire fighting personnel, and poor plant layouts, and general increase of fire hazards due to poor housekeeping and unsafe waste disposal practices. The hazards of plastics processing and fabricating are but slightly different, and are listed in the NBFU Report.

The National Board of Fire Underwriters recently issued Research Report No. 12, Nitroparaffins and Their Hazards. Among other uses, nitroparaffins are valuable solvents for synthetic resins and plastics, and are used to improve the quality of such products as polishes, cleaning compounds, vinyl resin coatings, cellulose acetate and acetobutyrate lacquers, industrial emulsions, and cosmetic creams and lotions. Officers and inspectors, in whose districts plants using nitroparaffins are located, would be well advised to consult this report.

Hazards of processing

The rupture of pipes and the failure of pumps, valves and fittings that are used to process flammable liquids and gases constitute a primary hazard in plastics processing, according to the National Board. For example, six men were felled by fumes at a Passaic, N. J., plastics plant last December 4 when a gasket on a reactor blew. The men included four workers, a fireman and a patrolman. They were overcome by vinyl chloride gas sweeping through the second floor of the plant. One worker was treated at Passaic General Hospital and released. The patrolman and another worker were kept at the hospital and listed in fair condition.

The Committee on Fire Prevention of The Society of the Plastics Industry recently issued a four-page bulletin which describes 12 fires in plastics molding and fabricating plants. Among these is the report of a fire suffered by a reinforced plastics fabricator.

This manufacturer makes plastic trays using glass mat reinforcements. Acetone, a flammable liquid, in open containers was used to clean resin from tools and the hands of employees. An employee making trays noticed flames on the floor near his feet. The fire quickly spread on the highly combustible process waste on the floor through the tray manufacturing section of the building. This section of the building was completely destroyed.

Firemen were hampered by a lack of water near the plant. The water carried on the fire truck almost controlled the blaze, but was soon depleted. Before the pumpers could replenish their supply from a source one mile away, the fire was out of control.

The committee comments that this is another instance of locating a plant too far away from an adequate water supply. Poor housekeeping caused the fire to spread rapidly on the process waste.

Incidentally, the 1,133 companies which are members of The Society of the Plastics Industry police themselves well through the Committee on Fire Prevention. This committee faces the fire hazards of the industry forthrightly, issues informative bulletins to the members and, as in the bulletin mentioned above, does not minimize the safety deficiencies of members. The National Fire Protection Association, by the way, has also published an informative bulletin, *Occupancy Fire Record*, FR 57-5, on fires in plastics plants.

Plastics in building construction

Speaking at the Fire Department Instructors Conference at Memphis in 1954, D. L. Breting, superintendent of label services, Underwriters' Laboratories, Inc., said: "I don't know if any of you have fought plastic fires but you are certainly going to if the use of this material continues without proper regard for the performance of plastics under fire conditions."

Breting was speaking of the ever-in-

Continued on page 306

Plastics are not always a headache to firemen. Fireman Fred C. Oney of the Middlebury, Vt., Fire Department examines plastic helmet credited with saving his life. He and five others were using grapple hook to pull timbers loose after fire in Middlebury College Playhouse. One of the hook's prongs straightened, releasing hold on beam, and "flew like a shot" hitting Olney's helmet—*MSA photo*

Back pressure, arm lift resuscitation is demonstrated to Fire Commissioner Edward F. Cavanagh, Jr. Fresh air is supplied from operator's mask to victim's mask. Air line attached to department's mask service truck supplies needs of both men—*All photos FDNY Photo Unit*

Respiratory Protection

Research, development and training employed to make fire fighting a safer profession

By JOHN B. DUNNE

FIRE FIGHTING has sometimes been considered a defensive service; one which waits for something to happen before springing into action. One visit to the New York City Fire Department Fire College will change anyone's mind about this. A continuing, directed, and active fight is being carried on, day in and day out, to learn more about the causes of fire and to recommend steps to prevent them. At the same time the fire college is continually studying ways and means of making fire fighting safer for those men who have selected it as their life work. It is this phase with which we will concern ourselves.

The writer was discussing fire fighting with a typical smoke-eating deputy chief in a large city one day. During the course of the conversation he asked the officer why the department did not institute a respiratory safety program (they had a particularly bad record for smoke-inhalation cases). "Hell," the deputy chief replied, "fire fighting isn't a safe business and we don't want these guys to be thinking about their own safety. We want them to get in there and knock the fire down. There's no place for a safety program in our department."

To say that New York has come a long way from such a horse-drawn point of view is a gross understatement. It has created a division of the fire college known as the "Safety and Research Laboratory." In addition, continual training is carried on in the use of respiratory protective equipment. These are but two facets of a program designed to make fire fighting *safer*, as well as *more effective*. This makes sense, doesn't it? How can a man fight a fire effectively when he has been exposed to dust, smoke or fumes which may nauseate him, render him unconscious, or even cause his death?

Respiratory protection program

More firemen are put out of action every day by inhalation of smoke and gases than by any other cause. Statistics will no doubt bear out that the largest number of fatalities in fire departments are due to respiratory emergencies. Is it any wonder then that New York is devoting so much time and effort to its offensive against this hazard to fire fighters? They have set up a three-pronged attack to fight this problem. It involves: (1) Research; (2) development; (3) education and training.

Each one of these is of equal importance and they are interdependent. If a fireman is to be given the most complete protection possible against inhalational hazards, it is necessary to know the nature of these hazards through research. The efficiency of respiratory protective devices must be determined to guard against these hazards. If deficiencies are found in existing devices, it is essential to develop newer and better means of protecting the respiratory organs of the men who fight fires. After the research and development stages, it is then imperative to get the information into the department. This is where education and training come into the picture. It should be apparent to the reader that this cannot be a static program.

Research

In 1956 Fire Commissioner Edward F. Cavanagh, Jr., directed that the Safety and Research Laboratory be set up. Facilities were provided at Grand and F. D. R. Drive, and a deputy chief placed in charge. Also selected was a staff of officers and men already versed in respiratory equipment. The laboratory was moved to the Fire College building in Long Island City in 1958.

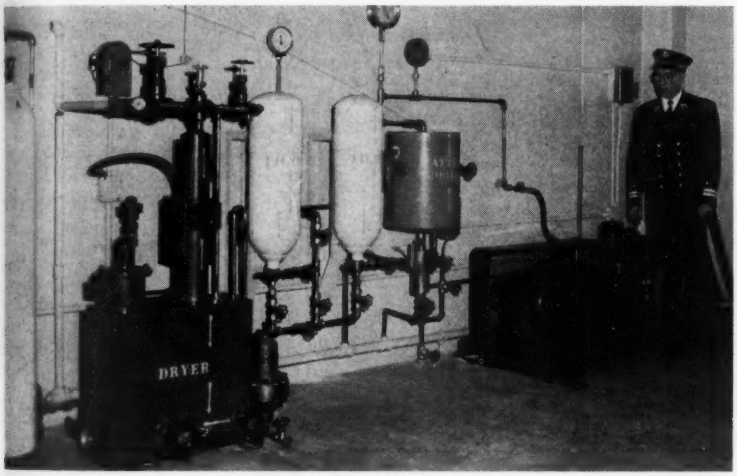
on of New York Firemen

One cannot visit this laboratory without being impressed by the zeal with which these men work. Unwilling to accept supposition or advertised claims about performance, they set out to determine exactly how a respiratory protective device works under fire fighting conditions. They knew, as do many fire department officers, that men often resist wearing masks. They also knew that in spite of wearing masks some men under certain conditions were knocked out. They knew that some masks were *approved* for certain gases under certain conditions, but firemen were overcome while wearing them. These men wanted to know *why!*

In many instances there was not an instrument or mechanical device to simulate human use of masks. Efficient means might not be available to give accurate data in the tests performed. This did not daunt the men at Research and Safety. *They made the equipment.* And they got results which outmoded much of the data previously published and relied upon.

One problem which faced the researchers was how to measure the negative pressure or suction necessary to get air from the valve in a demand mask. The manufacturers' claims and data from the approving agency didn't jibe with the fact that men complained of extreme efforts necessary to actuate these valves. A "breathing machine" was constructed which not only provided accurate control of opening suctions, but also increased its demands for air as its work increased —just as does the human body. From the findings provided by this work, new criteria were established for testing demand valves.

Next to come under scrutiny was the so-called "breathing air" furnished in demand-mask cylinders. This was found to have various contaminants which might endanger a fireman using this type mask. An ingenious, but complicated compressing unit was engineered which would provide air as safe and pure as is humanly possible to produce.



A completely new air compressing system which removes all moisture and contaminants is pictured above with its designer, Captain James Ferguson, Safety and Research Laboratory. All New York's demand mask cylinders are filled by this device

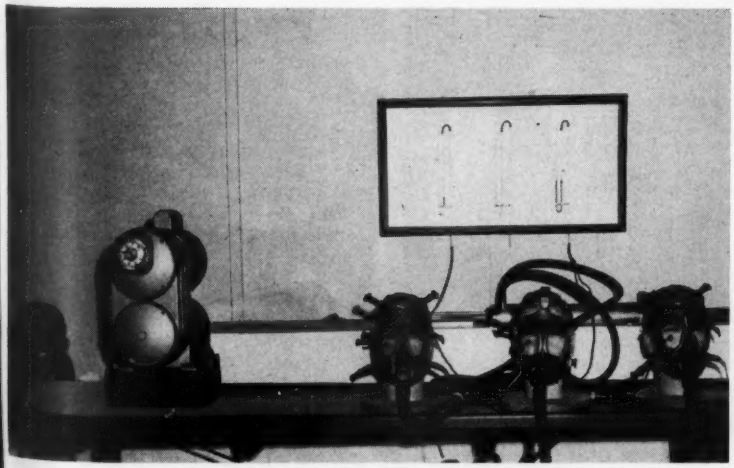
Development

Many persons in industry feel that research without development is sterile. They would be delighted to see the developments which have resulted from the research conducted by the Safety and Research Laboratory.

We have already briefly mentioned the development of the air compressing unit for producing pure breathing air. This has been designed to take the guesswork out of what is in the cylinder which the fireman carries on his back when wearing a demand mask. The painstaking care employed to remove contaminants all of the way along the line has resulted in a very unique compressor.

The evolution of the air pump pointed

Above: A new exhalation valve, patented by Captain Ferguson and developed at the Safety and Research Laboratory, prevents moisture from going from the mask to the canister in filter-type gas masks



Left: The nearest thing to human breathing can be reproduced by this unique testing instrument, developed and used at the New York City Fire College. It is employed for testing demand masks

up another need. At a large fire being fought by dozens of firemen, how to supply sufficient air cylinders becomes quite a problem. The unit tackled this—again starting from scratch. They developed a special apparatus from the chassis up. The body houses two cascade systems made up of several 300-cubic-foot cylinders. Take-offs are provided, so that more than one cylinder can be filled at a time. Storage racks for cylinders and repair equipment are also provided. The roof is fusible in case of a cylinder letting go. It will release and blow out without involving the rest of the vehicle. An examination of this truck will convince anyone of the vast amount of thought and care which went into its planning and development.

The all-purpose filter mask had been under fire for some time, because of its tendency to pick up moisture and increase breathing resistance. Accurate data on how much moisture was allowable could not be obtained. Designed many years ago, the smoke mask was not constructed to be worn in water fog now prevalently used in fire fighting. The mask, under certain conditions, actually became more of a menace than a protection. The men at Research and Safety Laboratory set out to get at the bottom of the matter.

Patented valve

Of interest is the positive check valve for the facepiece of an all-purpose mask. This was designed to prevent condensation occurring in the facepiece from passing into the canister and thus compounding the moisture problem. By using the valve developed at the Laboratory it is practically impossible to communicate any water from facepiece to canister. This was a decided step forward in bringing the all purpose mask up to date.

The above are only a few of the developments to come out of the Laboratory to date. When one considers what a short time the Safety and Research Laboratory has been in operation, it is remarkable how much progress has been made toward the solution of several of the problems peculiar to the fire service.

Approval of masks has always been vested in the United States Bureau of Mines. The fire fighter faces different situations than those confronting mine rescue squads. Extreme changes in temperature are to be expected by the fireman in the winter in many areas. This presents problems of fogging and condensation in valves not normal to the mine rescue worker who usually operates in fairly even temperature. Problems of fresh air supply, etc., are also different. It can be seen, therefore, that research and development by firemen for firemen is most essential.

Education and training

We mentioned at the outset that the New York Fire Department employs a three-pronged attack in its offensive against respiratory emergencies. The third, and by no means the least, of these is education and training.

Before the writer's first visit to the New York City Fire College, he was convinced that he would find a training school steeped in tradition, one set in its ways, and sure that these ways were right. A rude awakening was awaiting him. Deputy Chief Alfred P. Mendy, then in charge of the fire college*, made the writer welcome and a discussion immediately ensued about the proposed adoption of the mouth-to-mouth method of resuscitation by the department. This was so new at the time that many persons close to the field were not even aware of the proposed technique. While there, a film was shown to the Fire College staff, depicting this technique. This had been made at Baltimore, Md., City Hospital by Drs. James Elam and P. Safer. A very lively discussion followed the showing of the picture and the pros and cons of this recommended technique were discussed.

After this matter was talked about at some length, Chief Mendy asked to be excused so that he could attend a meeting at city hall to discuss this method of artificial respiration. It was to include Dr. Elam, medical officers of the city, and top officials of the fire department. This introduction to educational center of the department removed any "steeped in tradition" ideas from the writer's mind.

The fire college carries on a continuing program of teaching and reviewing all of the skills and techniques of fire fighting, rescue, and fire prevention. All the way from the raw recruits to the most venerable officers, the men must be schooled to learn a whole new set of skills or review knowledge already gained, or participate as newer techniques are developed. The job of training and reviewing 10,000 firemen and 2,400 officers is a year-round proposition which consumes the full time of a staff of six men.

Proficiency in the use of protective breathing equipment is of vital concern to the fire college. Let's face it. Very few people like to be encumbered by a mask. When men are taught to realize, however, that their life may depend on the wearing of this equipment, they will usually go along. It takes a lot of training and a lot of practice to insure that putting on a mask will become almost as natural as putting on bunkers or a helmet.

A new era

With the passing of the "smoke eater" philosophy, teaching mask techniques is somewhat easier. The modern fireman realizes that "eating smoke" is not heroic, it is really very stupid and most likely will harm his respiratory organs and heart. Much of the credit for this change in attitude of New York fire fighters is attributable to the work of men from the fire college who continually drum away at the dangers of smoke inhalation and the necessity of protective breathing equipment.

The "rookie" fireman is indoctrinated in use of masks during his rigorous training in the fire college and is then put through the smoke chamber at Welfare Island. He is first introduced to the dangers of smoke without mask and then is required to enter the chamber properly protected where he works for a specified time under smoke conditions. When he arrives at his permanent assignment, his mask is as much a part of his equipment as boots or bunkers, spanner wrench, helmet and coat. This is the state of mind for which all training officers strive—the natural attitude of the fireman toward his respiratory equipment.

Conclusion

We have spoken of the New York Fire Department's three-pronged attack to fight the hazards of smoke inhalation. Plans for the near-future call for the addition of 450 more masks for the protection of the men and for more research toward development of a mask which would operate most favorably under varying conditions.

As one officer aptly put it, "our goal is to cut the number of cases of smoke inhalation to an irreducible minimum." This will require tireless efforts and true dedication of all those responsible. □□

* (now Deputy Chief James T. Ward)

Mouth-to-mouth technique of resuscitation is demonstrated by those responsible for its development. Chief of Department George David (at left) and Chief Mendy, Fire College, look on with Dr. James Elam (second from left) as the technique is demonstrated by Captain McMahon of the Baltimore Fire Department

Let's talk frankly about mildew

Fire hose manufacturers have various "treatments" which they apply to their hose to render it mildew resistant.

So does Eureka . . . and we believe that ours is second to none!

BUT our more than 80 years' experience in the manufacture of the highest-quality municipal fire hose has convinced us that the *only sure way to prevent mildew* in fire hose is to *dry it thoroughly* every time it gets wet. Don't overlook even a light shower or stray spray at a fire which may dampen the unused hose in the truck bed.

It is just as important to keep hose *dry* as it is to keep it *clean*. "Treatment" doesn't take the place of good care in prolonging hose life. At best, it provides mildew *resistance*, not prevention! Such treatment may not *wash out*, but normal abrasion might *wear through* it. So play safe! KEEP YOUR HOSE DRY!

We sincerely hope that this frank word of caution will substitute for costly experience in many fire departments . . . particularly in financially-pressed volunteer companies! Naturally we'll be happy to hear from you if you have anything to add on this subject.

Note how criss-crossing vertical cords tie all plies into a single jacket.

"For greater protection to life and property"

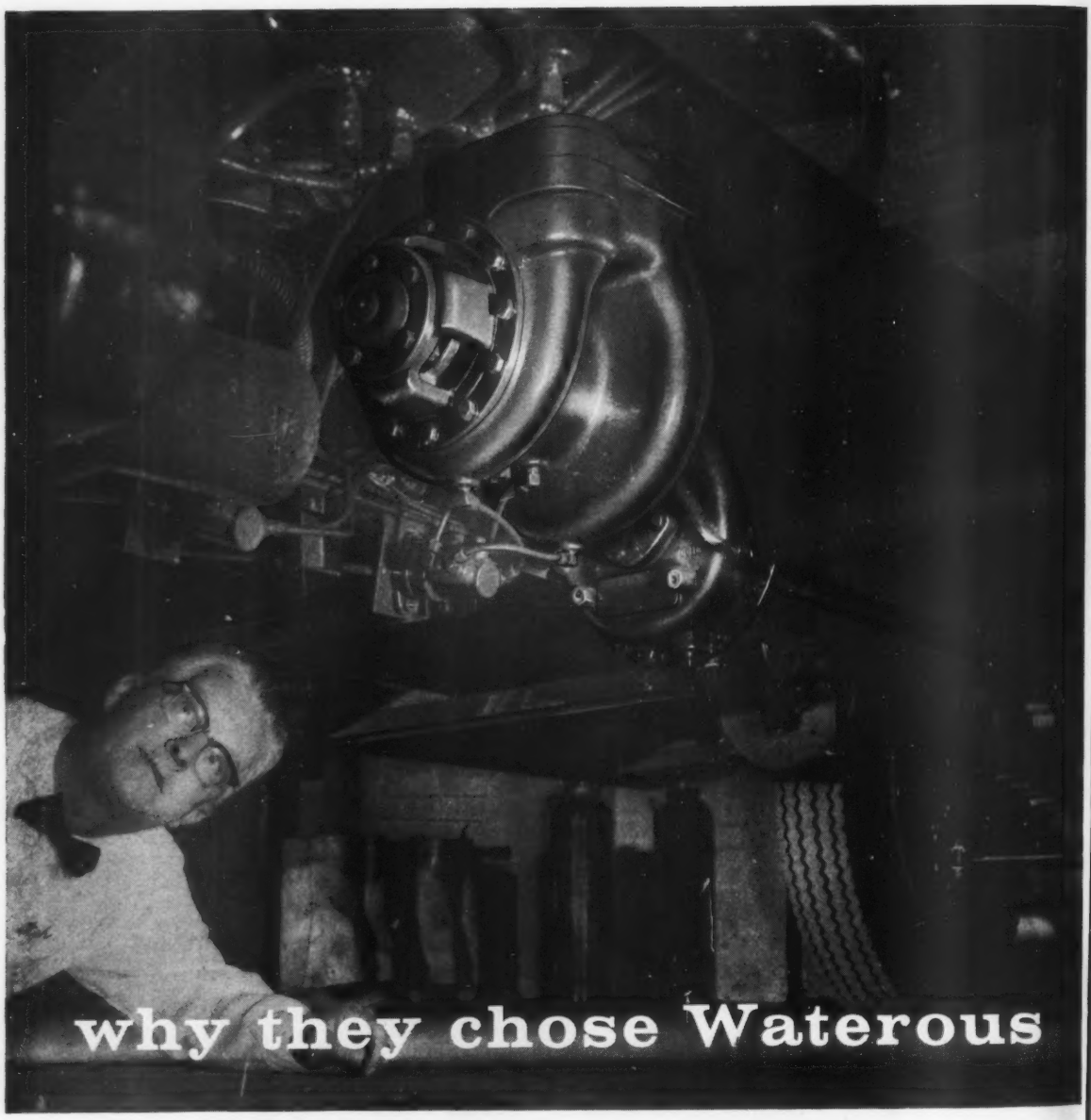
EUREKA FIRE HOSE

Since 1875, Specialists in Manufacturing Circular-Woven Rubber-Lined Fire Hose

EUREKA

1 Market Street • Passaic, New Jersey

Division of United States Rubber



New CP-3 Pump gives maximum booster pump performance!

The Waterous Model CP-3 provides maximum performance—a wider range than ever before possible—for P.T.O. operation. This two-stage, centrifugal pump has exclusive series-parallel design . . . parallel for volume, series for pressure. It has a capacity up to 350 GPM, pressures to 700 PSI. Pressures up to 1000 PSI are available with Underwriters' pump. Ideal for "pump and roll" and for fog operation. Waterous quality construction throughout includes helical gears and oil-lubricated, outboard, antifriction bearings. For complete information on the CP-3 and other Waterous pumps, write:

WATEROUS COMPANY

80 E. Fillmore Ave., St. Paul, Minnesota, Dept. 310

WHAT'S NEW

Among the Manufacturers

- **products**
- **processes**
- **personalities**

Mine Safety CO Kit

It is claimed the extent of carbon monoxide poisoning can be determined by testing exhaled air or a blood sample with a CO Poisoning Test Kit developed by Mine Safety Appliances Company, 201

North Braddock Avenue, Pittsburgh 8, Pa. A color change produced in a tube of specially impregnated silica gel is compared with a color chart and the percentage of CO in blood is read from one of two conversion tables. The tests take from one to five minutes. The kit is supplied in a convenient carrying case.

New Battery Connector

Jano Machine Co., 133 East Lincoln, Escondido, Calif., has announced a "Safety Faucet" battery connector which is claimed prevents sulfation on battery tops and permits instant disconnection of battery cables. The four-piece, oil-filled contact is said to provide a mechanically secure low-resistance connection.

Imunivy and Imunoak

E. D. Bullard Co., 2680 Bridgeway, Sausalito, Calif., and its distributors offer an alcoholic extract of poison ivy and poison oak, which is said to be 80 to 88 per cent effective in eliminating or reducing sensitivity to infection by the plants. The extract may be given orally or injected intramuscularly by a physician.

Emergency Oxygen Unit

Oxy-Aid Scientific Corp., 137 East 57th Street, New York 22, N. Y., is marketing an inexpensive emergency medical oxygen unit which weighs 9 pounds, complete with regulator, face mask, case and two extra cylinders. Each cylinder is said to supply 12 minutes of oxygen and may be replaced in less than 30 seconds.

Trautwein Heads FEMA

A. C. Trautwein, senior vice president, marketing, The Fyr-Fyter Co., was elected president of the Fire Equipment Manufacturers Association at its annnal meeting in New York City.

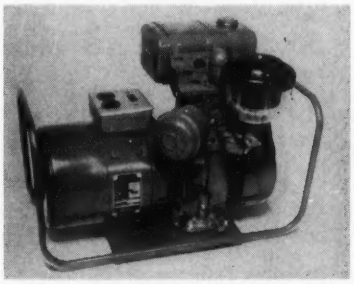
Stewart Boal, president of Randolph Laboratories, Inc., was elected vice president, and C. J. Halpin, vice president, sales, American LaFrance Division of Sterling Precision Corp., was named treasurer.

In addition to the above, the board of directors include: R. L. Weir, vice president and director of sales, Elkhart Brass Mfg. Co.; L. C. McKesson, vice president Ansul Chemical Co.; and A. D. Symons, treasurer, W. D. Allen Mfg. Co., immediate past president of FEMA.

Mobile Alerting Device

A new inexpensive alert device for selective call radiotelephone systems has been developed by Monitoradio Division, I.D.E.A., Inc., 7900 Pendleton Pike, Indianapolis 26, Ind. Model AA-1 may be used to intermittently actuate a vehicle horn or any type of alarm where continuous operation is not desirable. While designed primarily for mobile applications, it may also be used in any fixed location in conjunction with a receiver.

New Jeta Generators



A 750 watt electric generating plant has been developed by Jeta, Inc., 957 Saw Mill River Road, Yonkers 2, N. Y. The unit is a single-phase, 60-cycle, 115V a.c. plant with a speed of 1800 rpm.

Completely portable, it is isolated from vibration and radio noise and weighs 104 pounds. The same basic plant is being modified to develop 3600 rpm at 1500 watts.

Smoke Odor Control Used after Detroit Hotel Fire

The 12-story Tuller Hotel in downtown Detroit had a serious smoke odor problem after a $1,000,000 flash fire gutted its lobby and killed three employees on January 17. The disastrous, three-alarm blaze burned only 66 minutes before 25 fire companies put it out.

The fire created clouds of thick, black smoke that permeated walls, drapes, furniture, personal possessions and every nook and crevice of the huge structure. Detroit Fire Marshal Matthew J. McNally, who estimated the damage, told the hotel's manager it was safe to allow the permanent residents and 200 trans-

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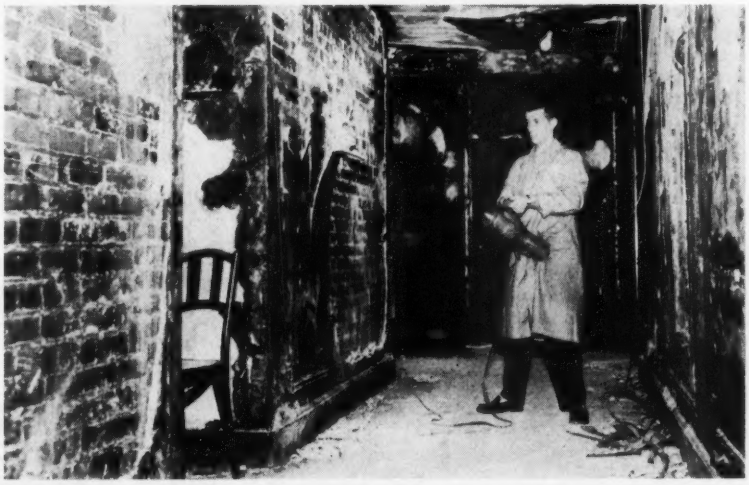


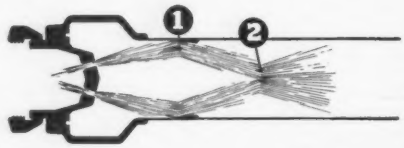
Second-floor corridor over Hotel Tuller's burned-out lobby was heavily damaged and required concentrated effort to remove smoke odor

DUBL-TUFF FOAM NOZZLE

UL

Better because:

- **DOUBLE-BOUNCE JETS** inject air *twice* for better foam.
- **LONG RANGE PROJECTION** — no obstructions in stream to steal pressure or cause friction loss.
- **CLOG-PROOF** — strainer and large jets keep nozzle working, even with dirty water.
- **STURDY and LIGHTWEIGHT** — won't tire the nozzle operator, yet built for rough service.



High pressure jets give "double-bounce," inject air into foam stream twice, doesn't lower pressure.

TWO TYPES:

Type 1 With pick-up hose, uses foam source at the nozzle. Neoprene hose resists deterioration, stays flexible in cold weather. Hose is reinforced with spiral wire to prevent kinking, assures constant supply of foaming agent. Hose connection O-ring sealed, only hand pressure is needed to attach. Cannot leak, pressure improves seal.

Type 2 (without pick-up tube) is used with a proportioner in the line, or at the pumper.

Both types equipped with Monel strainers, easily removed for cleaning Nozzle body wrapped with red marlin cord for insulated, sure-grip holding. Protective bumper at tip.

YOUR DUBL-TUFF FOAM TEAM

DUBL-TUFF foam *plus* an Akron IN-LINE or BY-PASS EDUCTOR *plus* an Akron DUBL-TUFF NOZZLE

Style	Size	Type	Gallonage	Dimensions	Weight	Price PB	Price CP
3601	1½"	Type 1	60 GPM	36¼" long	12½ lbs.	$ 74.00	$ 78.
3602	1½"	Type 2	60 GPM	36¼" long	11 lbs.	57.00	60.
3120	2½"	Type 2	120 GPM	41" long	15 lbs.	130.00	135.

TWO SIZES: ★ 1½" nozzle for 600 GPM of Foam ★ 2½" nozzle for 1200 GPM of Foam when operated with 100 P.S.I. at the nozzle.

Choice of chrome or polished brass finish.

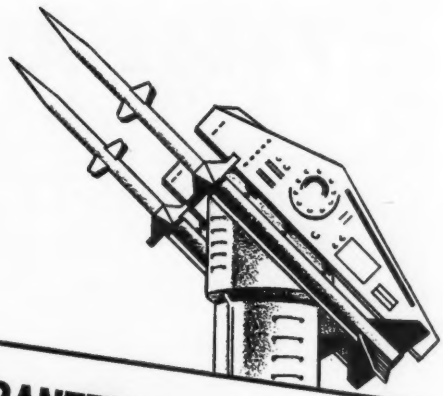
Akron Brass Mfg. Co., Inc.
Wooster, Ohio

Akron Mfg. (Canada) Ltd.
Aylmer, Ontario

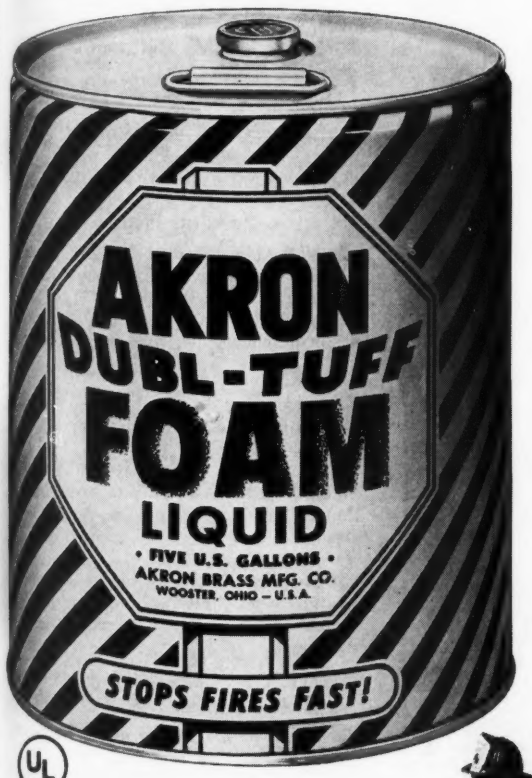
AKRON BRASS
FIRE FIGHTING EQUIPMENT

AKRON DUBL-TUFF FOAM

Produces smaller, tougher bubbles— spreads over fires quicker



GUARANTEED* by Akron to be the finest foam available. It has extinguished rocket fuel fires where others have failed.



CLINGS TO ANY SURFACE, horizontal or vertical, forming a long-lasting, cohesive mass of small air-filled bubbles.

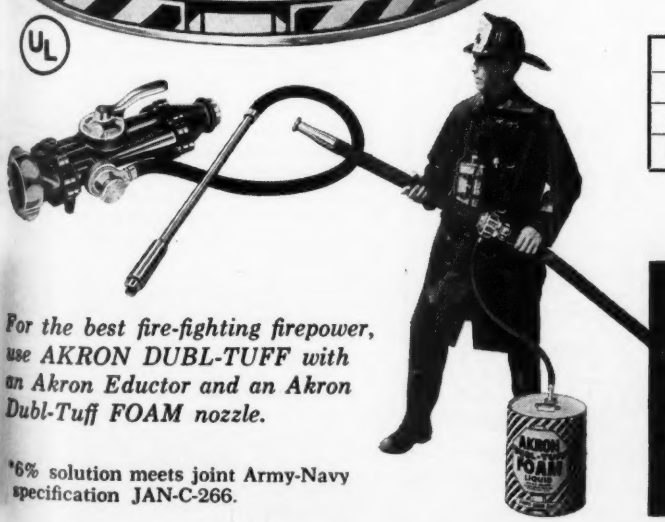
FLOATS FREELY on flammable liquid surfaces, has high water retention for maximum cooling and stability.

GOOD INSULATOR, it is effective in controlling flash-backs and for quick control of Class "A" and Class "B" fires.

RESISTS FREEZING, the 3% solution may be stored safely at temperatures down to 0 degrees F. 6% solutions withstand 10 degrees F. Special low temperature foams available on special request.

DOES NOT DETERIORATE with age, your supply is always fresh and ready to use.

Qty.	3%	6%
5 to 95 gals.	$5.50 per gal.	$4.00 per gal.
100-995 gals.	5.00 per gal.	3.50 per gal.
1000 or more	4.50 per gal.	3.25 per gal.



For the best fire-fighting firepower, use AKRON DUBL-TUFF with an Akron Eductor and an Akron Dubl-Tuff FOAM nozzle.

*6% solution meets joint Army-Navy specification JAN-C-266.

AKRON BRASS
FIRE FIGHTING EQUIPMENT

FALSE ALARMS

Command Decision

A salty Marine Pfc, newly arrived at Camp Pendleton, Calif., was immediately placed on guard duty at a remote road post and given orders that no vehicles were to pass. In due course, a jeep rolled up with a corporal-driver and an officer as passenger.

Despite the corporal's explanations and pleas the Pfc was adament; no one was to pass. Finally, the exasperated officer entered the conversation with orders for the corporal to drive on without regard to the sentry.

The guard brought the matter to a halt by calmly addressing the officer: "Beg pardon, sir, but I'm new at this post. Who do I shoot first, you or the corporal?"

Telephone operator: "I'm sorry sir, but that number has been taken out."

Jealous fireman: "I know, and I'm trying to find out who took her out!"

Horrified father watching daughter select costly wedding gown said to his wife: "I don't mind giving her in marriage, but must she be gift-wrapped?"

They tell about a fireman who was downtown the other day. He saw a sign in a store window which read: "Before you buy pants come in and look at ours."

He went inside but being unable to find a male clerk bought a couple of neckties and left.

A young oil prospector, engaged to an actress, has been trying to make a strike so he could afford to get married to the young lady. The other day the actress—her patience evidently beginning to wear thin—sent him a card, on which was written, simply:

"Get well!"

Typographical Error?

"The driver approached the coroner at 90 miles per hour."

On a crowded elevator in Washington, a friend asked a congressman how the previous year had been for him.

"Best year I ever had," was the reply. Then he spotted a commissioner of internal revenue and added: "I mean spiritually, not materially."

"Well snap into it, Dunnagan—start making out your accident report forms!"

Scorching Retort

A couple had just bought a dog.

"One thing I want you to train him to do is bark whenever he smells smoke," said the woman to her husband. "Then we can be sure of being warned in case a fire breaks out while we're asleep."

"Yes," he said. "It might also reduce the number of meals being ruined around here while you're on the telephone."

The oldtimer walked into the doctor's office with the worst case of trembling hands the doctor ever saw.

"Tell me, said the doctor, "how long have you been shaking like this?"

"For years, Doc," the oldtimer answered, "but it's been much worse lately."

"Perhaps you drink too much," the doctor said.

"I don't know," said the oldtimer, "What's too much?"

"Oh, say a quart a day," the doctor responded.

"A quart a day!" gasped the oldtimer, "Gosh, Doc, I spill that much!"

Burning Issue

Bright Aide: "I read an article that claimed paper can keep you warm. Do you believe it, chief?"

Gloomy Brass: "I sure do, a mortgage has been making me sweat for years!"

Kinkchaser: "Why do you say you've been shopping when you haven't bought a thing?"

Missus: "Why do you say you've been fishing when you haven't caught a thing?"

Just heard about the Kentucky mountain girl who wanted a quiet wedding—so her father bought a silencer for his shotgun.

The only thing that goes as far as it did ten years ago is the dime that rolls under the bed.

Dispatcher: "Say, Tom, how are you and that new girl of yours getting along?"

Chief's aid: "Pretty good, I guess. But she's just like an auto radiator."

Dispatcher: "How's that?"

Chief's Aid: "She'll freeze up on you if you don't keep her filled with alcohol."

Two oldtimers were discussing a third old crony. One said sadly, "Poor old Joe seems to be living in the past."

"Well, and why not?" the other replied bitterly, "It's a lot cheaper."

One of the nicest things about old age is that you can whistle while you brush your teeth.

HITCH YOUR MOUSETRAP

Continued from page 283

ates more medical indigents than any other disease.

Now, medically indigent families cannot contribute to the community; in fact, they must be helped by it. Most of us absorb much of the cost of maintaining those whom illness has rendered incapable of helping themselves.

A healthy, thriving community contributes to prosperity. What's good for the community is good for everybody.

To get back to mousetraps by way of detour, after working for the American Cancer Society in various capacities, in 1957 I served as Crusade chairman of the Illinois Division. This year I was asked to assume national chairmanship of the 1959 Crusade. I knew it was a demanding job, entailing extensive travel and time away from my business. But I wanted to contribute all I could to this great cause. I accepted the chairmanship because I consider the conquest of cancer America's most urgent health need. And I'll be frank to admit that I also accepted it because I knew it was good business.

The major assets of The Reuben H. Donnelley Corporation are people, our more than a million customers and our employees. If they're in good health we benefit. The American Cancer Society helps keep them on the job.

In quite another way, my work for the Society is also good business. My public service through the Society's Crusade has gained The Reuben H. Donnelley Corporation the kind of goodwill that money can't buy. My salesmen tell me it helps when a customer says, "Reuben Donnelley . . . oh yes, your boss spoke at a big cancer meeting last night. He's doing quite a job."

My mousetrap is publishing and advertising. We keep on trying to improve our products and services. And I think we have the best public relations men in the country working for us. But there is no substitute for the welcoming warmth of a customer who knows that you are *giving* to the community as well as *selling* to it.

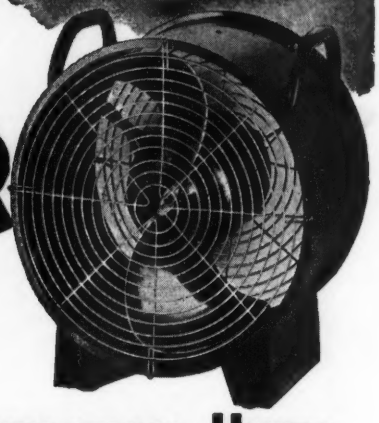
The Cancer Crusade has a simple, universal appeal. Cancer strikes in two out of three homes. Knock on any door, and you'll find that some member of the family or a close friend has had the disease.

If you do something for the Crusade, the Crusade will more than repay you. You will have the rewarding experience of taking part in a great humanitarian effort—and it will show a profit in many other ways. □□

Get smoke out, get air in

with Multi-Purpose

SUPER VAC



CONTROLLED VENTILATION UNITS

NOT JUST A FAN . . . but a powerful vacuum-action air screw . . . Super Vac is amazingly simple in operation, made possible by the efficient design of the **powerful propeller** that is the heart of the unit. This patented propeller produces 100% pulling or blowing power over its entire surface.

Proved method of saving lives while also reducing smoke damage

Fire departments **nation-wide** attest to the speed with which Super Vac provides **controlled ventilation** . . . so necessary in modern fire fighting. This multi-purpose unit primarily (1) gets rid of smoke and fumes through its powerful vacuum action . . . or, (2) furnishes a tremendous blast of fresh air into the smoke-congested area, reducing the dangers of combustion and asphyxiation. Although one unit is often sufficient, **complete controlled ventilation** can be more speedily accomplished by using two or more units . . . one or more units **pulling out the smoke and fumes** while the remaining units **blow in a steady supply of fresh air.**

★ **Highly portable . . . operates in any position**
★ **Design permits vertical stacking**
★ **Made in 16" and 24" sizes**
★ **AC or DC, regular or explosion-proof motors**
★ **Choice of red or white baked enamel finish**
★ **Running board mounts available**

For complete details and specifications on

. . . contact your fire equipment dealer

. . . or write manufacturer

SUPER VACUUM

SUPER VACUUM MANUFACTURING CO., Inc
319½ East Seventeenth Ave., Denver 3, Colorado

ardmore

HOSE REELS

complete selection to meet *your* needs

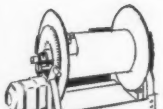
When you specify Ardmore Hose Reels you can be sure of complete selection to fit your needs best. Standard models include choice of capacities for up to 300 feet of hose for single reels . . . and for up to 600 feet of hose for dual reels. All types of rewind drives. When you compare hose reels, remember Ardmore units for maximum dependability and longer service through features like these:

SMOOTH-SEAMED, PERFECTLY ROUND DRUM SURFACE—protects hose from damage. Drums and discs made of extra heavy duty gauge steel.

SAFETY DRIVE—direct gear-to-gear drive. No linkage to break in an emergency, cause "play" or extra parts maintenance.

COMBINATION BEARING AND SWING JOINT ASSEMBLY—guarantees perfect reel alignment and pressure-tight lines. Supplied for pressures up to 600 pounds and pressures above 600 pounds.

HOSE ROLLERS AND GUIDES—for high speed hose take-off and rewind from any angle. Prevents hose jumping over reel end. Protects hose from damage.



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WRITE FOR FREE CATALOG

Let us send you the "Ardmore Fire Fighting Reels" catalog . . . for complete information.

MISSILES AGE

Continued from page 279

bunkers. When we reach the point in our rocket progress of carrying humans, something in the way of rescue will be needed.

Let us consider the matter of cooling requirements as affected by the fuels involved. Ordinary combustibles release about 8,000 Btu's per pound when burned. Every pound of water applied to a fire can absorb up to about 1,000 Btu's of this heat, so cooling an ordinary fire is no great problem. Once the temperature goes below the kindling point, out goes the fire. When we consider flammable liquids, which average around 18,000 Btu's per pound heat release, things become more difficult. Applying water as foam takes full advantage of its heat-absorbing properties, so that again we can effectively break the fire triangle. This time we say we cool below the flash point of the liquid.

High energy fuels

The new fuels pack a lot of wallop because missiles need energy at a minimum weight. Their heating values start around 25,000 Btu's per pound and go on up to almost twice that. No longer are we dealing with flame temperatures of about 1,500°F. The theoretical combustion temperatures of various fuel-oxidizer combinations are in the range of 4,000–7,500°F. Under such conditions, no materials can last very long. The useful life of structures exposed to such heat is measured in seconds. Rocket combustion chambers can be built to withstand terrific heats for their extremely short useful life, but when things go wrong, the fire may be anywhere else. Inside of moments, a sleek airframe may be a tangled inferno of raging flames. It should not be impossible to deal with such fires but so far, we have no solution.

We know that some metals such as sodium, react with water and therefore many metal fires cannot be attacked with water. To some extent, the same is true with certain of the new fuels. Applying water as spray, or as foam, to such fires will be of little practical value.

For example, liquid oxygen used in many large missiles forms shock-sensitive explosions when mixed with fuel. If tanks are ruptured in a fire, the unburned mixture may detonate from the impact of a hose stream. This is not just a theory! Such explosions have already been experienced in development test work.

In addition, most rocket fuel-oxidizer combinations will operate in the vacuum which exists outside the earth's atmosphere. Once ignited, they continue to burn regardless of any cutting off of the air supply. The third side of the fire triangle is meaningless under such conditions.

We must not take too dismal a view of what difficulties may arise in making the space and missile age fire safe. Many people have worried about the dangers

of carrying nuclear weapons in flights over our own soil and that of friendly countries. The built-in safety of atomic weapons has now reached the point where aircraft so armed have crashed and burned without a nuclear explosion.

The same inherent degree of safety can probably be incorporated into practically all today's scientific accomplishments which now present a major fire or explosion hazard. It will not be easy. Protecting mankind from the unforeseen consequences of his new techniques will require a new look in fire protection. We must look into the future, rather than back to the past. Going places is now more important than knowing where we have been for centuries. We must rely on science and engineering as the basis for decisions rather than unsupported opinions. Relying on past experience will be valid only for similar situations. For what we are facing, there is no experience!

In the past, fire fighting has required a mixture of courage and brutally hard work handling hose streams. Tomorrow we will need more courage, more brain power. Unless we can develop new apparatus, there will still be hard work to do, but we can no longer rely on muscle power alone to do what must be done.

Until we recognize that a problem exists and requires our utmost technical resources, we shall probably continue to plod along as we have done in the past, putting out fires as we come to them. Stating this fact is not taking a gloomy attitude about the whole business. We humans always take the course of least resistance, changing our ways only when we are forced into it, and then unwillingly. We can do the same with the fire problems about to confront us, ignoring them as long as possible, then working in frantic haste to find a way out while we suffer from our follies.

That is the path of complacency. The price of following it in this new era will be paid in human lives and property loss, a toll even greater than we are experiencing today. We cannot fail to wake up to the challenge and develop the know-how to prevent catastrophes from happening. For unless we do, we shall surely be faced with them! □□

February Fire Losses

Estimated fire losses in the United States during February amounted to $98,120,000, the National Board of Fire Underwriters has reported.

According to Lewis A. Vincent, NBFU's general manager, this $98,120,000 loss represents a decrease of 5.5 per cent from losses of $103,853,000 reported for February 1958, and a decrease of 13.2 per cent from losses of $112,983,000 for last January 1959.

Losses for the first two months of 1959 now total $211,103,000, an increase of 3.6 per cent from the first two months of 1958, when they amounted to $203,771,000.

These estimated losses include an allowance for uninsured and unreported losses.

Bringing you the Facts on the latest fire equipment

When your American LaFrance representative calls on you, he brings with him news of the widest selection of fire protection equipment available anywhere. You can rely on his advice, because the unusually wide range of American LaFrance equipment makes it possible for him to recommend *exactly* what you need. Backed by the world famous American LaFrance quality, there is no need for him to overstate performance claims.

Factory trained and field experienced, he represents only one company — American LaFrance. He does more than merely take your orders. He brings facts on new products, and is ready to demonstrate their use. And his interest does not cease when he makes the sale.

His advice has helped and is respected by men in the fire service everywhere. When he next visits you, ask him about some of these new products:

- **ALL-Dacron Hose**
- **Dual-Constant-Gallon Nozzles**
- **Window-Cator Gas Masks**
- **Transistor Sirens**
- **"Mounty" Battery Hand Lamps**

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Model JR-M

Regular Price $49.50

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Low, Low Priced at only $34.50

Our Model JR Master is the newest light weight, durable 360° revolving portable warning light that commands attention with 90 sharp eye-catching impulses per minute . . . 100 candle power bulb and 4″ Alzac Finish Non-Tarnishing Reflector. Will not rust or corrode . . . stainless steel clamp ring for easy relamping. Sturdily constructed base of heavy gauge steel with durable chrome plate . . . Weather-proof. Equipped with continuous-duty long lasting motor and self-lubricating gears for years of trouble-free service. Fade proof Top Dome available in red, blue, or amber. Can be mounted permanently, without disassembling, in 15 minutes. Portable unit comes with new type ceramic high flux magnetic base. The ultimate in a new low cost warning light.
7″ in Diameter—10″ High—Weight: 4½ pounds.

MODEL JR-M
Comes with Magnetic Base and Cord with Plug which fits cigarette lighter socket.
Net Price $34.50

MODEL JR-P
For Permanent Roof Mounting.
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Designed for Volunteer Firemen, Sheriff Depts., Auxiliary Police, Civil Defense, Unmarked Police Cars, Official Cars, Combination Hearse — Ambulance Service, Industrial Emergency Vehicles.

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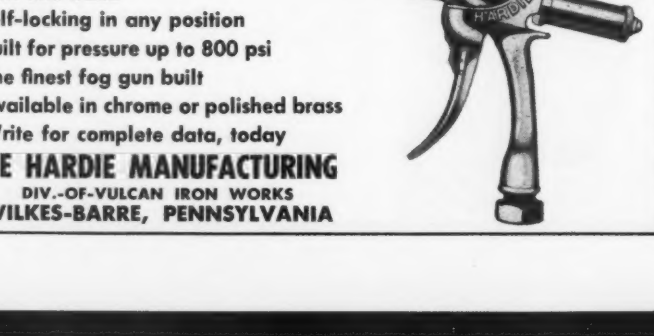

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- Available in chrome or polished brass
- Write for complete data, today

THE HARDIE MANUFACTURING
DIV.-OF-VULCAN IRON WORKS
WILKES-BARRE, PENNSYLVANIA

AIRCRAFT

Continued from page 282

ing improved through creation of helicopter specialists who are trained in initial attack, in locating and constructing helispots, and in air operations on large jobs. The creation of Helitack crews in 1956 further proved the possibilities for effective fire fighting through use of this medium. During the 1957 fire season some 300 fire fighters from the national forests, the California Division of Forestry and the Los Angeles County Fire Department were trained in "helitactics" as part of the cooperative research and development program of the U. S. Army, the California Division of Forestry and the U. S. Forest Service to integrate helicopters into fire suppression activities.

Helitack crews effective

These specialists were used in different ways. They made 42 initial attacks throughout the state, controlling 32 fires in their early stages with no other aid. On five fires they were aided by air tankers. On four other fires Helitack crews were soon joined by ground or smoke-jumper crews who aided in suppression. In only one case was a Helitack crew unable to top the fire in initial attack.

Average time travel for the Helitack crews was 33 minutes, including flight time from the company base for those helicopters not on stand-by contract. Effectiveness of such fast initial attack has been evidenced by reports of several fires. Where Helitack crews could not control a fire on initial attack, they paved the way for fast follow-up crews. A report on the Pate Fire on the Los Padres National Forest reads: "Fire in inaccessible area on ridgetop. Crew made hover-jumps near the fire and constructed helispot. Relief crews, supplies and equipment were flown in and out by the helicopter. At least 30 acres and $900 in costs were saved."

Helitack-specialist teams also perform important jobs on large fires such as reconnaissance and scouting, management of air traffic, maintenance of helispots, servicing of helicopter accessories and hot-spotting isolated sectors of fire line. They have also proved effective in northern California as mop-up and patrol crews on lightning fires following initial attack by smoke-jumpers.

In the Devore Fire (San Bernardino National Forest) the efficiency of the specialists in packing and installing helicopter hose trays and in helping lay 4,000 feet of 1½-inch hose, was a vital factor in bringing the 96-acre fire under control in a brushy rugged area.

These crews have proved valuable in other ways: In training other fire fighters in helicopter use and safety, in preparation of presuppression plans, in helping increase detection coverage on days of low visibility and high fire danger by serving as observers.

At least one national forest head has said that the helicopter and its crew were a valuable aid in fire prevention work. Once forest users were aware of the helicopter patrol, they remained out

of areas closed to public use. As additional fire fighting services become more aware of the possibilities for helicopter fire-spotting, detection, scouting and attack, and funds are made available for further experimentation, more intensive use will be made of this modern asset, and more specialists trained in its operation. Already, the helicopter has become an established tool in modern forest and field fire suppression, and it may be more widely employed in municipal fire fighting in the near future.

The American fire service has not hesitated to adopt new ideas and equipment to further fire suppression, regardless of cost. On this theory it will continue to "powerize" fire control and extinguishment as rapidly as scientific research and manfacturing skills create the improvements. Speed in this procedure will be measured almost entirely by availability of funds. □□

National Fire Fighting Air Corps Urged

A bill has been introduced in the House of Representatives by Rep. Hiestand (R-Altadena, Calif.) which would establish a fire fighting air corps to combat fires in national forests by chemical or water bombing.

The measure would place the "aerial fire department" under the jurisdiction of the Forest Service, using military surplus airplanes.

According to Hiestand, "a fire fighting air corps unit based in the Antelope Valley could reach Southern California national forests within a few minutes, and could save the taxpayers millions of dollars and protect our priceless forests from the devastation of fire, and the floods that follow."

Although inspired primarily by the disastrous fires in the State of California, Hiestand's bill would make the suggested national "aerial fire department" available wherever aerial protection might be desired.

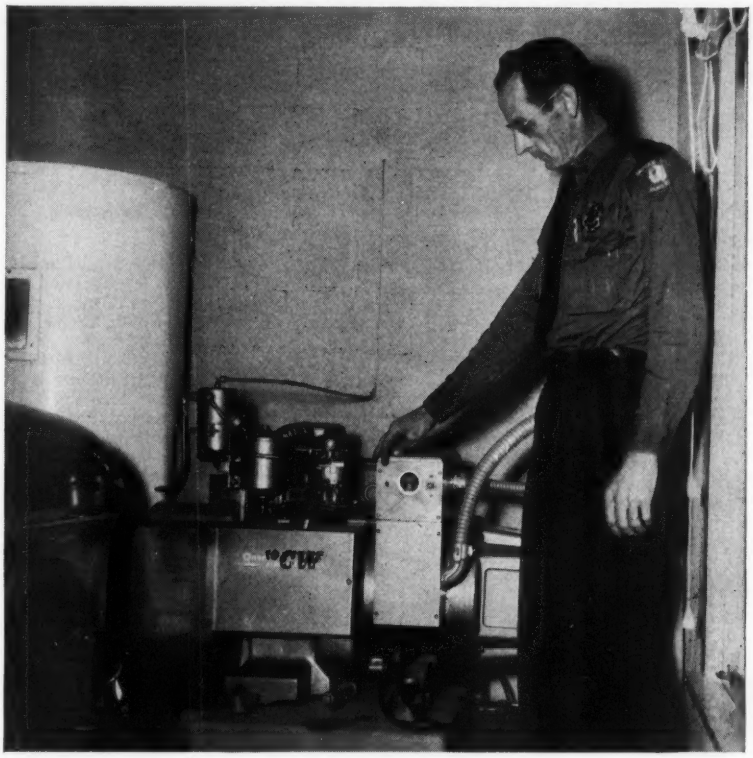
New I. R. F. A. A. Officers

Conrad H. Kreyling, River Edge, N. J., has been appointed president of the International Rescue and First Aid Association, succeeding R. Herman Weaver, Roanoke, Va., who has resigned for health and business reasons.

M. Loyd Fuller, Dallas, Tex., has been appointed first vice president, succeeding Kreyling; and Frederick Evans, Arnprior, Ontario, Canada, has been named second vice president, succeeding Joseph J. Banach, Marinette, Wis., who resigned due to business reasons.

The appointments were made by the I.R.F.A.A. board of directors at a joint meeting with the executive committee held in Alexandria February 28. Successors to Mr. Fuller and Mr. Evans and appointments of other regional, state and provincial officers are to be announced by President Kreyling in the immediate future.

Onan NEWS REPORT



Onan Standby Electric Plants guarantee power in emergencies

This Onan 10KW emergency electric plant is installed in the community building of *Indian Hills, Ohio.* It not only provides the police department with all the light and power required, but supplies needs of the fire department, too!

When power interruption occurs, the Onan plant starts automatically and supplies current for all essential purposes . . . lights, radio communication, signals, heating system, and other motor-driven equipment.

Dependable Onan emergency electric plants provide electric power for operation of all vital municipal services. In time of disaster, when power interruptions are most likely to occur, emergency power saves lives, protects property, helps to restore and maintain order. Available in sizes from 500 to 200,000 watts; Diesel or gasoline-powered models.

Teletype machines in the Norwalk, Connecticut police department are supplied with power in emergencies by an automatic Onan Standby Plant. Norwalk's 3,500-watt Onan unit also furnishes power for the oil burner, radio, ventilating fans and 60 fluorescent lights.

See your local distributor or write for folder on standby models

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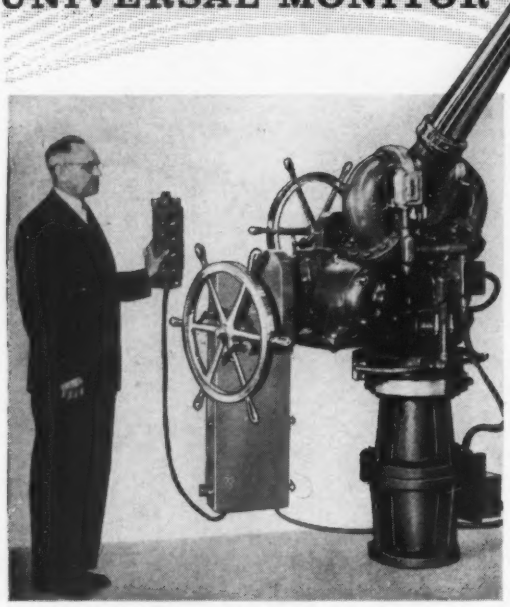
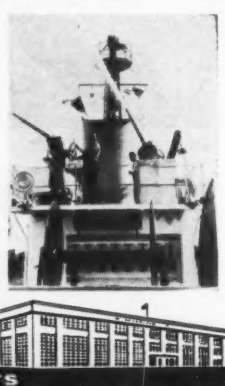


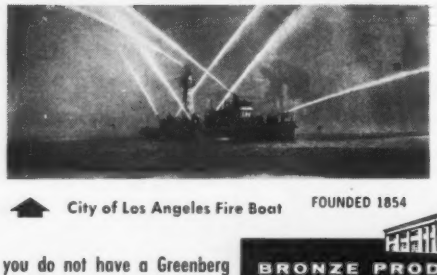
From coast to coast, Greenberg fire protection equipment is meeting the rigid requirements of modern fire fighting methods.

Whether it be monitor nozzles, fire hydrants, couplings or fittings, M. Greenberg's Sons manufacture them in all sizes and to all specifications. Pictured here is the new Greenberg "New Yorker" universal monitor nozzle. Five of these 3000 gallon-per-minute manually operated nozzles are mounted throughout the John D. McKean, with the sixth mounted on top of the fire tower, operated from below by remote control.

Remote (or manual control) New Yorker Universal Monitor Nozzle

John D. McKean, New York City Fire Boat





City of Los Angeles Fire Boat

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PLASTICS

Continued from page 291

creasing use of plastics in building construction and decoration. He then demonstrated a sample of material being bid on for an installation involving 500,000 square feet. "Notice," he said, "the heavy black smoke that is released and how the plastic softens and continues to burn where it falls. This demonstration involves roughly one-tenth of a square foot of material. Can you imagine fighting a fire involving over half a million square feet?"

Breting stressed that not all plastics are bad actors when it comes to fire. He described two plastics intended for use as luminous ceiling material, and said that when tested they exhibited one-fifth the flame spread of red oak wood.

The speaker warned that trade names have no significance in the classification of the burning characteristics of plastics. He pointed out that even the basic terms such as thermoplastic, thermosetting, polystyrene or vinyl do not necessarily indicate how the product will perform under large-scale fire conditions. He said, "Plastics vary not only in basic materials used but also in materials that may be added for specific purposes, the process by which it is formed, and the sizes and shapes into which they are formed."

Meaning of flammability ratings

Incidentally, a warning on the burning characteristics of plastics and their flammability rating may be relevant. When you see plastics rated as low, very low, low to none, moderate or none—remember, as Mathew M. Braidech, research director of the National Board of Fire Underwriters, points out that "Much of this early work (of evaluation) has been conducted with arbitrarily established empirical test conditions, under which simple, comparative observations of ignition or burning were made."

These tests were intended, as Mr. Breting notes, "to evaluate the hazard of plastics for small articles such as tool handles, toys, decorations and the like." He was convinced of the inadequacy of these tests as applied to plastics intended for large-scale installations when he learned that plastic panels which put the U. L. test furnace out of commission for three days were classified as "slow-burning."

The Second Edition of the N.F.P.A. *Inspection Manual*, just published, says of the ASTM test for flammability of plastics: "This test is helpful as a rough indication of relative combustibilty, but is made with very small test samples and provides no reliable information as to the behavior of the material as interior finish. It has not been adopted by the N.F.P.A."

In the same section, the Manual notes that plastics include materials with widely differing properties, and advises that the inspector should ask for a tunnel test rating on any structural assembly involving a plastic material in order to determine how it may be expected to behave as an interior finish.

Apropos of Mr. Breting's findings,

F. D. Lundberg, inspector, Bureau of Fire Prevention, Rockford, Ill., in an article in the July 1954, issue of FIRE ENGINEERING, reported that the intensity of a dwelling fire was apparently increased by plastic tiles which had been installed on the kitchen walls and ceiling.

When the fire, started by a short circuit, reached the plastic tile, it spread so rapidly that persons who had been sitting at the kitchen table were literally chased out the kitchen door by the flames. As he went out onto the porch, the homeowner looked back at the kitchen which was then completely ablaze and to quote his words, "It was raining fire." This effect was caused by the melting and dropping of the burning tile from the ceiling.

Inspector Lundberg observed that, "although the fire confined itself mainly to the kitchen, the entire first floor was extensively damaged due to the dense smoke and intense heat from the burning tile."

In considering the hazards of plastics in building construction, it would be well to weigh seriously the words of Mathew M. Braidech, research director of the National Board of Fire Underwriters, "At present, the plastics industry is experiencing only "fringe" problems; as the field of building construction is entered more deeply, these will increase in complexity and number."

Plastic consumer products

What fire hazard, if any, do small, finished plastic products normally found in the average home present? There have been cases where fabricators, for reasons of economy, esthetics or ease of fabrication, have used flammable plastics, and accidents have occurred. In general, however, as the NBFU Research Report states, "With the exception of cellulose nitrate, the plastics do not have sufficiently low ignition temperatures to constitute an unusual ignition hazard."

Do plastics present any other hazard to fire fighters? In the next issue we shall report on what the writer believes may be the main hazard of plastics for fire fighters.

SOURCES

Research Report No. 1, "Fire Hazards of the Plastics Industry," Revised Edition, 1955, National Board of Fire Underwriters, 85 John Street, New York 38, N. Y.

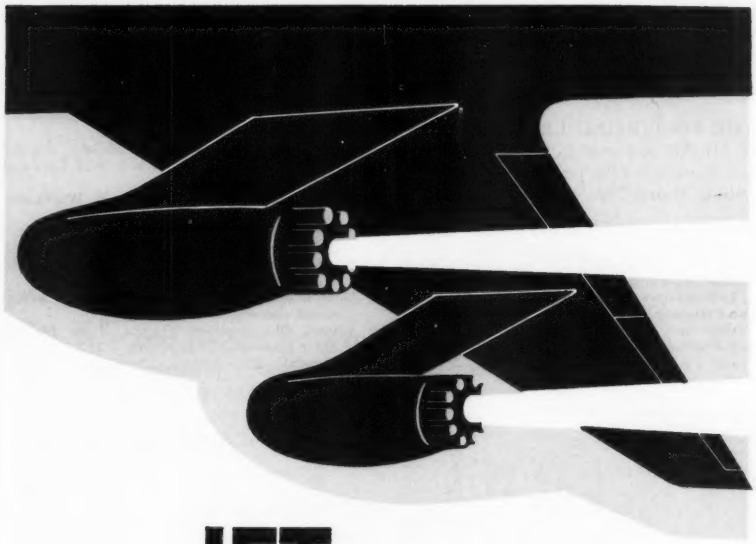
Fires in Plastics Molding and Fabricating Plants, Executive Committee on Fire Prevention, The Society of the Plastics Industry, Inc., 250 Park Avenue, New York 17, N. Y.

Pretty Plastics—Ugly Fires, by D. L. Breting, presented at the 26th F.D.I.C., Memphis, 1954. Published and distributed by the International Association of Fire Chiefs, New York, N. Y.

Interpretation of Flammability Evaluations and Their Application to Fire Safety Standards, by Mathew M. Braidech, Research Director, National Board of Underwriters, Journal of the Society of Plastics Engineers, January, 1959.

Research Report No. 11, "Fire and Explosion Hazards of Organic Peroxides," 1956, National Board of Fire Underwriters, 85 John Street, New York 38, N. Y.

N.F.P.A. Inspection Manual, Second Edition, 1959, N.F.P.A., 60 Batterymarch Street, Boston 10, Mass.



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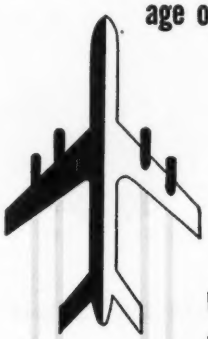

Each increase in jet fuel production augments the need for **control of fire in flammable liquids.**

Another vital industry served by

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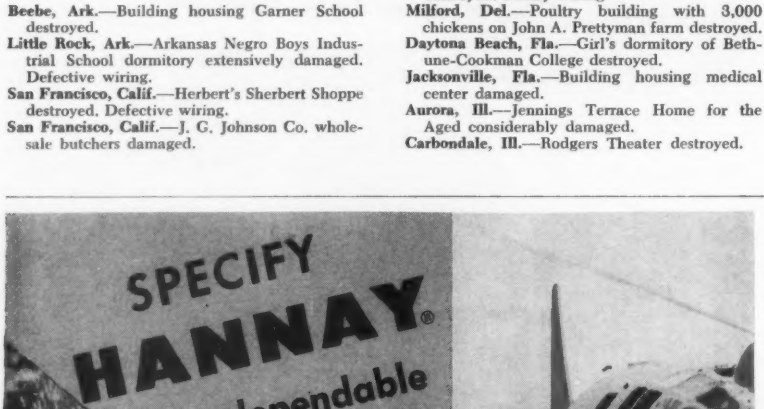
West Chester, Pa.

NATIONAL FOAM FIRE PROTECTION SYSTEM

What's Burning

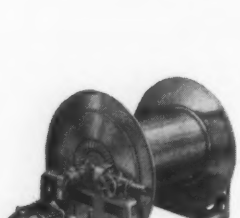
THE FOLLOWING LIST includes fires of $10,000 and over in the United States and Canada for the period from February 19th to March 17th.

Beebe, Ark.—Building housing Garner School destroyed.
Little Rock, Ark.—Arkansas Negro Boys Industrial School dormitory extensively damaged. Defective wiring.
San Francisco, Calif.—Herbert's Sherbert Shoppe destroyed. Defective wiring.
San Francisco, Calif.—J. G. Johnson Co. wholesale butchers damaged.
San Francisco, Calif.—Tremain Apartments damaged. Laundry flue.
San Leandro, Calif.—Half-block of industrial shops damaged.
San Rafael, Calif.—Dwelling of Alfred Wilsey destroyed.
Glastonbury, Conn.—Arbor Acres laboratory research building destroyed.
Stamford, Conn.—Olympia Building, housing Carousel Restaurant, and adjoining buildings damaged.
Dover, Del.—Dwelling of Harry E. Warrington destroyed. Faulty wiring.
Milford, Del.—Poultry building with 3,000 chickens on John A. Prettyman farm destroyed.
Daytona Beach, Fla.—Girl's dormitory of Bethune-Cookman College destroyed.
Jacksonville, Fla.—Building housing medical center damaged.
Aurora, Ill.—Jennings Terrace Home for the Aged considerably damaged.
Carbondale, Ill.—Rodgers Theater destroyed.
Elkhart, Ill.—Dwelling of John L. Oglesby damaged.
Franklin, Ill.—Franklin Methodist Church destroyed.
Lincoln, Ill.—New barn and corn crib on Sam Ewing farm destroyed.
Carbon, Ind.—Ayer-McCarel Clay Co. tile plant destroyed.
Columbia City, Ind.—Main plant of Holmes Lumber Co. destroyed.
Cumberland, Ind.—Tony Guidone Supermarket damaged. Gas line leak.
Fort Wayne, Ind.—Aldersgate Methodist Church damaged.
Mooresville, Ind.—Newcomer Lumber Co. damaged.
Des Moines, Iowa—Eight businesses in northwest section destroyed or damaged.
Fort Madison, Iowa—Building housing Dunsworth Bakery and apartments destroyed.
Mason City, Iowa—Business building housing four firms damaged.
Sidney, Iowa—Building housing Taylor Hardware and Furniture Store destroyed.
Covington, Ky.—John Hils Co. paper warehouse damaged.
Hopkinsville, Ky.—Belmont Elementary School destroyed.
Hopkinsville, Ky.—Jordan Furniture Co. damaged.
New Orleans, La.—Higgins Plywood plant damaged.
New Orleans, La.—Louisiana News Co. warehouse damaged.
Eustis, Me.—Straton Light Co., diesel generating plant and equipment house, destroyed.
Upton, Me.—General Store, restaurant, post office and a former inn destroyed.
Baltimore, Md.—Baltimore Biological Laboratory, Inc., destroyed.
Baltimore, Md.—Business building occupied by J. J. O'Hara drug store, Eugene Jenkins & Sons hardware store, Joseph Lapaglia barber shop and Rio Bar and Restaurant, damaged.
Baltimore, Md.—Northwestern Police Station heavily damaged.
Baltimore, Md.—Parish house of Franklin Street Presbyterian Church heavily damaged.
Baltimore, Md.—Wilchrome Manufacturing Co. heavily damaged.
Chestertown, Md.—Lehigh Chemical Co. plant destroyed.
Boston, Mass.—Historic St. Mathew and the Redeemer Church destroyed.
Boston, Mass.—Washington Street building damaged.
Gardner, Mass.—Chestnut Street Methodist Church destroyed.
Lynn, Mass.—Business building, formerly Coburn School, damaged.
Lynn, Mass.—Thompson Electric Welding Co. considerably damaged.
New Bedford, Mass.—Union Foodland Supermarket damaged.
North Easton, Mass.—Steadfast Rubber Co. damaged.
Randolph, Mass.—Abandoned wood planing and finishing mill of U. S. Lumber Co. destroyed.
Cadillac, Mich.—Municipal garage destroyed. Spark from welder's torch.
Fairgrove, Mich.—Fairgrove Hotel destroyed.
Farmington, Mich.—National Food Store market in BellAire Shopping Center destroyed.
Flint, Mich.—Burton Auto Parts damaged. Gasoline tank explosion.
Flint, Mich.—Glen Roy Hardware Co. store damaged.
Ludington, Mich.—Matt's Clothing Store, Dick & Helen's Restaurant and barber shop destroyed.
Petoskey, Mich.—Building housing Jim Talbot men's wear store, Edward Shebrat Tailor Shop, vacant store and apartments, destroyed.
Pontiac, Mich.—Bar and restaurant, "300" Lounge, Quality Printing Co., offices, barber shop and bowling supply store destroyed.
Warren, Mich.—Food Basket Supermarket destroyed.
Warren, Mich.—Factory-warehouse owned by Leo J. Gonyea destroyed.
Faribault, Minn.—Minnesota School and Hospital dormitory building destroyed.
Kansas City, Mo.—Kennels housing 30 show dogs on Bruce Lowe Farm destroyed.
St. Louis, Mo.—Woolson Spice Co. extensively damaged.
Springfield, Mo.—Lambda Chi Alpha fraternity house at Drury College destroyed.
Glendive, Mont.—Monarch Lumber Co., store, refrigeration service and television radio supply firm heavily damaged.



U.S. Air Force O-11B
Photo courtesy American-LaFrance

HANNAY reels used on Air Force fire fighting units



Hannay reels in specially designed cabinet installation swing out for fast operation . . . provide Air Force fire fighting teams with water and chemicals *at the nozzle* for instant response. For your equipment, *specify* hose reels designed and built by active firemen . . . insist on HANNAY.

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Standard Hannay electric rewind reel with horizontal auxiliary hand crank rewind. Write for complete catalog.

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Atlantic City, N. J.—Astor Hotel destroyed.
Atlantic City, N. J.—Royal Palms Hotel destroyed.
Bayonne, N. J.—Buildings housing telephone answering service, shoe repair shop, confectionary store, apartments and rooming house, destroyed.
Jersey City, N. J.—Bellyea Electric Repair Co. heavily damaged.
Jersey City, N. J.—New Jersey Warehouse Co. discount store virtually destroyed.
Lake Lackawanna, N. J.—Dwelling damaged.
Passaic, N. J.—Building housing supermarket damaged.
Paterson, N. J.—Associated Supply Corp. paint store and warehouse severely damaged.
Perth Amboy, N. J.—Hotel Madison extensively damaged.
Trenton, N. J.—Mercer Bag and Burlap Co. plant destroyed; adjoining Goldscheider of Vienna, Inc., religious goods plant, damaged.
Williamstown, N. J.—Warehouse at rear of Nicholas Lanzalotti Appliance Store destroyed.
Buffalo, N. Y.—Loblaw supermarket and 13 other stores damaged.
Hempstead, L. I., N. Y.—General Tire Store considerably damaged.
Lake Placid, N. Y.—Lakeside Inn, Adirondacks resort landmark, destroyed.
Lockport, N. Y.—Sunrise Lumber & Supply Co. destroyed.
Long Beach, L. I., N. Y.—Four stores on West Beach Street destroyed.
Poughkeepsie, N. Y.—Davision House, Vassar College dormitory, badly damaged.
Sayville, L. I., N. Y.—Art Playhouse destroyed.
Asheville, N. C.—Swannonoa Church of the Nazarene destroyed.
Hickory, N. C.—Hickory Supply and Paper Co. warehouse damaged.
Nagshead, N. C.—Sportsman Hotel destroyed.
Raleigh, N. C.—Manmur Bowling Center, Profile Tavern, State Beauty Shop, Manmur Shoe Shop, Carey's Trading Post and Manmur Barber Shop, destroyed.
Roxboro, N. C.—Pat Brown Lumber Co. destroyed.
Winston-Salem, N. C.—Curb Market destroyed.
Cleveland, Ohio—Building on Kinsman Road, housing stores and apartments, damaged.
Curtice, Ohio—Dunn Motor Sales Co., Oak Harbor National Bank, Kovalchick Salvage Co. and dwelling of Wesley Greiner, destroyed; Curtice Tavern and apartments damaged.
Kent, Ohio—R. D. Fageol Corp., highway equipment firm, damaged. Broken fuel line.
North Madison, Ohio—J. B. Quirk General Store and Hathaway-Williams Auto Parts Store damaged. Leaking gas main exploded.
Toledo, Ohio—Federal Government building, housing Usher Furniture Co. destroyed.
Warren, Ohio—Griswold Store damaged.
Oklahoma City, Okla.—Townley Dairy damaged. Overheated heating system.
Ponca City, Okla.—Higdon Florists building destroyed.
LaGrande, Ore.—LaGrande Apartments destroyed.
LaGrande, Ore.—Schoen's Bakery, Photo Album, Fitzgerald Florists and Town House store destroyed.
North Plains, Ore.—Grain storage elevator of DeFrees & Sons Feed Mills damaged.
Portland, Ore.—Woodland Park Bowl destroyed.
Adamstown, Pa.—Cherry Hill Machine Co. destroyed.
Boyer, Pa.—Methodist Church destroyed.
California, Pa.—Phillipsburg Elementary School damaged.
Chambersburg, Pa.—Three grain elevators and warehouses of East Fayetteville Elevator Co. destroyed.
Easton, Pa.—Zion Convalescent Home destroyed. Discarded cigarette.
Hazelton, Pa.—Gary Hotel destroyed.
Lyndell, Pa.—Lyndell Grain Co. elevator destroyed.
McKees Rocks, Pa.—St. John the Baptist Church and parish house damaged.
Meadville, Pa.—C. S. Betts Storage & Carting Co. warehouse destroyed.
Mount Pocono, Pa.—Bar and recreation room building on El Pocono Dude Ranch destroyed.
Muddy Creek, Pa.—Terry Hill Mfg. Co. damaged.
Philadelphia, Pa.—Arch Street building, housing Active Uniform Co. and Majestic Restaurant heavily damaged.

Please turn page

DO YOU KNOW...?

Q. What is a Hi-Light Badge?

A. A revolutionary new lightweight Blackinton Badge designed for featherweight comfort, service and appearance.

Q. Why was Hi-Light developed?

A. It was originally designed for use on lightweight summer uniforms, but has become extremely popular for year round wear.

Q. Just how light is a Hi-Light Badge?

A. A Hi-Light Badge is actually one-third the weight of a conventional brass badge, so light you hardly know you're wearing it.

Q. What other superior qualities does Hi-Light have?

A. Even though the badge is made from an entirely new feather-light metal, it retains the same durability and high quality deep cut precision die work that has made Blackinton badges famous.

Q. What finishes are available on Hi-Light Badges?

A. Three gleaming finishes, brilliant polished nickel, long-lasting rhodium and rich lusterous gold plate.

Q. How can I recognize a Hi-Light Badge?

A. Every Hi-Light Badge has the Blackinton Hi-Light trademark stamped on the back of the badge. It's featherweight and this recognized trademark will assure you of buying and wearing the best.

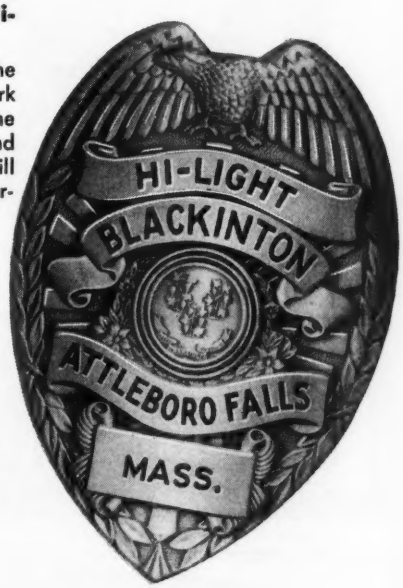

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PLATE 237

Female inlet—2½", 3" or 3½". Male outlets—2½". Pin lug or sensible lug swivel. Rough body, painted red with polished bronze or chromium plated trim.

PLATE 238

Short body apparatus type. Female inlet—4", 4½", 5" or 6". Male outlets 2½". Pin lug or sensible lug swivel. Rough body painted red with polished bronze or chromium plated trim.

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RANSON, WEST VIRGINIA
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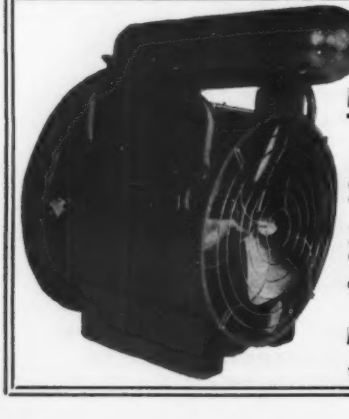

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Philadelphia, Pa.—Cambridge Mfg. Co. destroyed.
Philadelphia, Pa.—Kenny's One-Hour Cleaners, restaurant and apartment dwelling damaged. Explosions.
Philadelphia, Pa.—Marine Equipment & Supply Co. destroyed.
Philadelphia, Pa.—PM Bar & Restaurant, Schlecter & Segal Fur Store and Maurice Kolinsky's fur store, damaged.
Philadelphia, Pa.—Reading Co. freight yard building, along with three boxcars, destroyed. Explosions.
Pittsburgh, Pa.—Stanton Heights Golf Club destroyed.
Reading, Pa.—M. J. Earle Co., Inc. warehouse destroyed.
Scranton, Pa.—Springbrook Coal Co. coal-breaker destroyed.
Newport, R. I.—One-hundred and seventy-year-old Bateman's destroyed.
Olneyville, R. I.—Lyra Brown Nickerson Settlement House destroyed.
Woonsocket, R. I.—Apartment dwelling of Alfred Koury, housing Jack's Furniture Store, extensively damaged.
Anderson, S. C.—Dwelling of Pete Stathakis destroyed.
Pawley's Island, S. C.—Pawley's Island Pavilion and various concessions destroyed.
Dallas, Tex.—Grandview Apartments destroyed.
Greenville, Tex.—Dream Lodge Motel damaged. Faulty wiring.
Hopewell, Va.—Metropolitan Linen Supply Service Co. damaged.
Randle, Wash.—C & E Lumber Co. plant destroyed.
Vancouver, Wash.—Cedar Quick Gristmill damaged. Reported arson.
Salem, W. Va.—Matheny Body Shop and Knights of Pythias Lodge building damaged. Punctured gasoline drum.
Fernie, B. C.—Fernie Sports Arena destroyed. Explosion.
Hamilton, Ont.—Turkstra Building, housing furniture store and motor vehicle license bureau, damaged. □□

Questions and Answers

Phone Alarm Systems

To the Editor:

How many communities in this country have telephone alarm systems?

B. D.

Answer: According to the National Board of Fire Underwriters, there are 52 telephone alarm system installations of which it has knowledge. Of these, 20 are in communities of 25,000 population or over. The NBFU states it has inspected 17 of these latter installations.

Daily Warm-ups

To the Editor:

Our department starts all apparatus engines daily and runs them for a few minutes. Is this good procedure?

W. H.

Answer: Most master mechanics and apparatus manufacturers frown on this practice. It is considered to lead to spark plug fouling and dilution of crankcase oil by gasoline. It is also the first step toward engine valve sticking.

Some experts point out that engine wear may be increased in this manner. Engine oil when new is alkaline. The oil quickly changes to acid, however, as exhaust gases blow by the piston rings and

contaminate it. These gases contain water and sulfur vapors which combine with road dirt and carbon to produce sludge. In addition, sulfurous acid (H_2SO_3) may be formed and etching of the cylinder wall metal may eventually occur.

From the above, the conclusion may be drawn that any unnecessary running of engines is undesirable.

Jump Record

To the Editor:

What is the greatest height on record that a person has been caught successfully in a life net?

T. H.

Answer: The greatest height we have record of is eight stories. It occurred at an apartment house in Newark, N. J., on August 1, 1955 (see FIRE ENGINEERING, November 1955).

Some years ago a general-interest magazine published an item which claimed a fireman jumped 10 stories during an exhibition. We have no record to substantiate this.

Storing Soft Suction

To the Editor:

Are there any precautions to be observed when carrying soft suction hose on pumper apparatus?

T. R.

Answer: In common with all rubber-lined cotton or cotton-synthetic fiber hose, the practice of forming the same bends during folding should be avoided. The continued folding in the same place may have a harmful effect on the lining and jacket and may manifest itself at a most inopportune time. The bends form high spots on the exterior, and since some dragging on the ground is inevitable, the jacket may wear thin at the high spots. Some fire departments and manufacturers recommend that a drum or reel be used for apparatus storage or that the hose be laid out full length.

Ordinary exposure to the elements should not prove harmful as most soft suctions are treated to resist the action of the weather. □□

Los Angeles Adds to Airport Fire Protection

Los Angeles City Fire Department has opened its second station at International Airport closing a major gap in the terminal's fire defenses. Station 95 is located at the east end of the airport where its crash and engine company can service the field itself and also a heavily industrialized area surrounding the station.

Station 80, the main crash headquarters, is located just off Sepulveda Boulevard, near the soon-to-be-built new terminal buildings. Another station will be constructed eventually at the west end of the airport.

Cliff Dektar

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FIRE COLLEGES

Alabama State Fire College—May 25-29, University, Ala. For information, write J. F. Ingram, State Supervisor, or W. L. Rickard, Assistant State Supervisor, Trade and Industrial Education, Box 2847, University, Ala.

Arizona State Fire School—Oct. 15-17, Phoenix, Ariz. For information, contact Battalion Chief Jake Siken, Firefighting Instruction Supervisor, Phoenix Fire Department, 49 South First Street, Phoenix.

California Fire Training Program—May 18-22—**Fire Training Officers Workshop,** Fresno; June 15-19—**Fire and Arson Investigation Seminar,** University of California, Los Angeles. For information, contact Thomas S. Ward, Supervisor of Fire Training, State Department of Education, 721 Capitol Avenue, Sacramento.

Civil Defense Instructor Training Course for Eastern Area—Apr. 27-May 1, **Radiological Monitoring for Instructors;** May 4-8, **Basic Civil Defense;** May 11-16, **Radiological Monitoring for Instructors;** May 18-22, **Radiological Monitoring for Instructors;** May 18-22, **Basic Civil Defense.** All sessions will be held at the Eastern Instructor Training Center, Office of Civil Defense Mobilization, Brooklyn 35, N. Y. For information, write the Center at the above address.

Colorado State Fire School and Tournament—June 17-20, Sterling, Colo. For details, write Arthur J. Becker, Secretary, Colorado State Firemen's Association, 2224 South Stuart Street, Denver 19, Colo.

Connecticut State Fire College—June 8-12, New Haven Fire Department Drill Grounds. For information write Roy W. Adams, Director of Vocational Training Field Service, State Department of Education, 490 Capitol Avenue, Hartford, Conn.

Florida State Fire College — May 19-21 — **Liquefied Petroleum Gas.** Aug. 3-7—**Seminar in Arson Investigation and Detection.** Sept. 7-11—**Units 101, 107, 201.** Sept. 14-18—**Units 102, 106, 202.** Sept. 21-25—**Units 103, 105, 204.** Sept. 28-Oct. 2—**Units 104, 206, 208.** For information, contact W. H. Barnett, Superintendent, P. O. Box 785, Ocala, Fla.

Idaho State Fire School—June 10-12, Boise, Ida. For information, contact Chief Steve Taylor, Fire Headquarters, Boise.

Indiana Fire Training Program—June 2-4, **Industrial Fire Control Conference;** Sept. 8-11, **26th Annual State Fire School;** Oct. 27-29, **Fire Inspectors Course;** Dec. 1-2, **Fire Management Course.** All courses will be held at Purdue University, Lafayette, Ind. For information, write Professor Shelby Gallien, Director, Public Safety Institute, Purdue University.

Nebraska State Fire School—May 3-5, Municipal Airport Grounds, Grand Island, Nebr. For information contact Russell D. Salak, Sec., Fire School Committee, P. O. Box 312, Schuyler, Nebr.

International Arson Investigator's Seminar—Apr. 27-May 1, Memorial Union Building, Purdue University, Lafayette, Ind. For information write Professor Shelby Gallien, Director, Public Safety Institute, Purdue University, Lafayette, Ind.

Maryland Fire School—May 1-2, **Barton American Pumps;** May 8-9, **Waterous Pumps;** May 15-16, **American LaFrance Pumps;** May 22-23, **Hale Pumps;** June 5-6, **Seagrave Pumps;** Aug. 3-5, **Third Annual Aerial Ladder Short Course;** Sept. 1-4, **Twenty-Sixth Annual Short Course for Firemen.** All sessions will be held at the Fire Service Building, University of Maryland. For information, write Robert C. Byrus, Director, Fire Service Extension, University of Maryland, College Park, Md.

Morris County, N. J., Fire School—May 5, Madison Fire Department Headquarters; June 2, Whippany Fire Headquarters; July 7, Rockaway Boro Fire Headquarters; Aug. 4, Fairchild Fire Co., Morris Township; Sept. 1, Par-Troy Hills District #6 Headquarters. For information, write Robert H. Wright, Publicity Chairman, Long Hill Lane, Chatham, N. J.

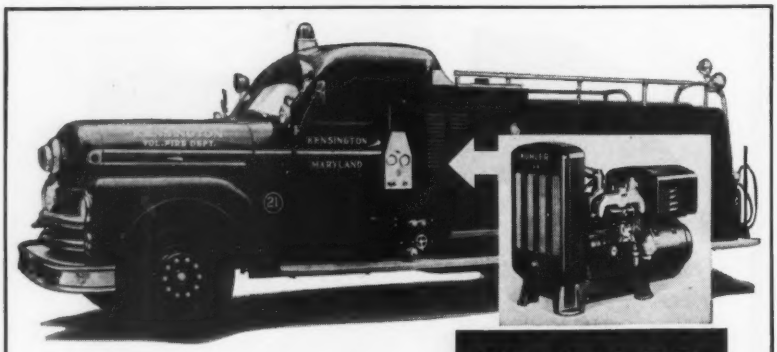
North Carolina Fire College—May 25-29, Charlotte, N. C. For information, write North Carolina Fire College, 125 South Davidson Street, Charlotte, N. C.

North Dakota Fire School—May 11-13, **Instructors Training School,** Bismarck. Limited number of applications accepted. For information, write to J. K. Eckes, Secretary, North Dakota Firemen's Association, Killdeer, N. D.

Northeastern Pennsylvania Volunteer Firemen's School—**June 6-7, Tunkhannock, Pa.** For information contact James H. Oakey, Director, P. O. Box 67, Tobyhanna, Pa.

Ontario Fire College—May 25-29, **Basic Fire Inspection Practices Course;** June 1-5, **Atomic Fire Hazards in Industry Course;** June 8-26, **Advanced Fire Inspection Practices Course;** July 6-10, **Volunteer Fire Officers Course, Part 1;** July 13-24, **Company Officers Course;** Aug. 10-28, **Administration Course for Senior Fire Officers;** Aug. 31-Sept. 4, **Basic Fire Inspection Practices Course;** Sept. 14-18, **Fire Department Instructors' Course, Part 1.** All the above courses are to be held at the Ontario Fire College at Gravenhurst. Sept. 14-18, **Thunder Bay Regional Fire School,** Fort William, Ont. Sept. 21-25, **Simcoe District Fire School;** Oct. 5-9, **Muskoka District Fire School;** Oct. 19-23, **Mutual Aid Forum.** The events listed above are to be held at the Ontario Fire College at Gravenhurst.

Pennsylvania Fire School — Mar. 30-Apr. 3, May 25-29, Aug. 24-28, Nov. 30-Dec. 4, **Fire Department Officership Course;** Apr. 19-17, June 8-12, Aug. 17-21, Oct. 5-9, **Basic Fire Fighting Course;** Apr. 27-May 1, Jun



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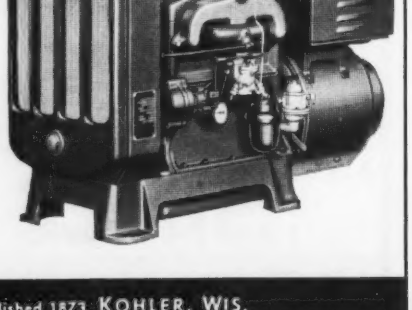
Model 5R61, *5KW, 115/230 volt AC. Remote start.*



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22-26, Aug. 31-Sept. 4, Oct. 19-23, **Fire Department Pump School;** May 11-15, July 6-10, Sept. 14-18, Oct. 26-30, **Advanced Fire Fighting Course;** July 20-24, Aug. 24-28, Sept. 28-Oct. 2, Nov. 16-20, **Ladder, Rescue and Salvage Course;** Aug. 3-7, **21st Annual Pennsylvania State Fire School.** All sessions to be held at the Pennsylvania State Firemen's Training School. For information write Art Espey, Director, Box 631, Lewistown, Pa.

Southern Wisconsin and Northern Illinois Fire School—Sept. 13, Truax Field Air Force Base, Madison, Wis. Secretary, Herman Pfund, New Glarus, Wis.

Texas Fire School—July 19-24, Texas A & M College, College Station. Director: Chief Henry D. Smith, Texas Firemen's Training School, College Station, Tex.

Tri-State Fire School—Sept. 14-18, Huntington, W. Va. For information write Captain R. M. Myers, Secretary Planning Committee, c/o Fire Chief's Office, 816—9th Street, Huntington, W. Va.

Virginia Fire College—June 22-26, College of William and Mary, Williamsburg, Va. For information write Chief Elliott W. Jayne, Director, Williamsburg Fire Department, Williamsburg, Va.

Virginia State Fire School—Aug. 24-28, South Boston, Va. For information write R. Lawrence Oliver, State Board of Education, P. O. Box 654, Harrisonburg, Va.

Washington State Command School for Senior Fire Officers—May 26-29, Yakima, Wash. For information, contact Chief W. K. Moore, Fire Headquarters, Yakima, Wash. □□

COMING EVENTS

Apr. 27-29—Campus Safety Association. Annual meeting, Michigan State University, East Lansing, Mich. For information, contact Norman V. Steere, Chairman, Conference Planning Committee, Campus Safety Association, Higher Education Section, National Safety Council, 425 North Michigan Avenue, Chicago 11, Ill.

May 7-9—Florida State Firemen's Association. Annual meeting, Marathon, Fla. For information write R. O. BuShea, Chairman, P. O. Box 200, Marathon Shores, Fla.

May 10-12—Mutual Aid Conference. Annual meeting sponsored by the Baton Rouge Mutual Aid System, Baton Rouge Chapter of American Society of Safety Engineers, and the Industrial Security Institute, in Baton Rouge, La. For information, write Fire Chief Robert A. Bogan, P. O. Box 96, Baton Rouge, La.

May 17—Southern Wisconsin & Northern Illinois Firemen's Association. Spring meeting, place to be announced. Secretary, Herman Pfund, New Glarus, Wis.

May 18-19—Southeastern Association of Fire Chiefs. Annual meeting, Durham, N. C. Secretary-Treasurer, Chief C. W. Wyrick, Fire Headquarters, Greensboro, N. C.

May 21-23—Eastern Association of Fire Chiefs. Annual meeting, Jamestown, N. Y. Secretary, Chief Edwin J. Clark, Box 328, Wayne, Pa.

June 1-5—National Fire Protection Association. Annual meeting, Atlantic City, N. J. General Manager, Percy Bugbee, 60 Batterymarch Street, Boston 10, Mass.

June 3-6—Arizona State Firemen's Association. Annual meeting, Kingman, Ariz. For information, write the local fire department.

June 5-6—Indiana Volunteer Firemen's Association. Annual meeting, La Porte, Ind. Secretary, Harry Fries, R. R. 3, Walkerton, Ind.

Please turn page

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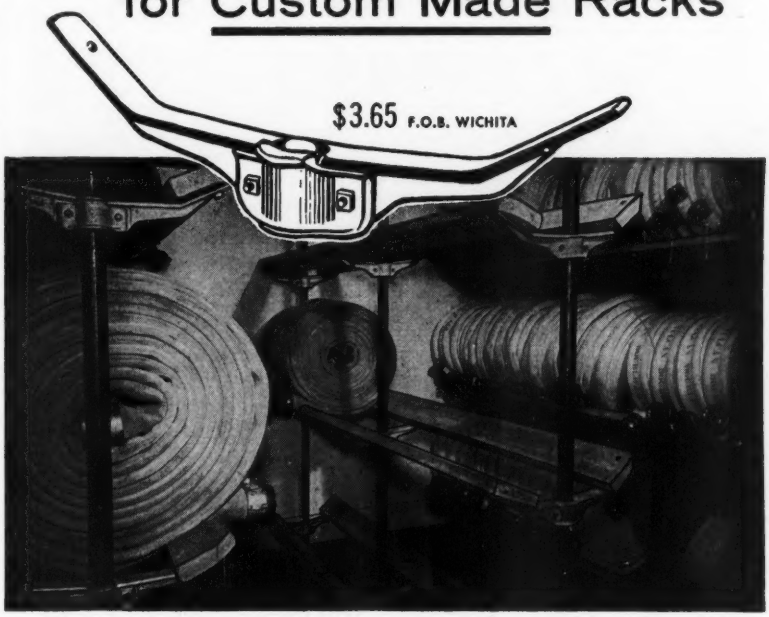

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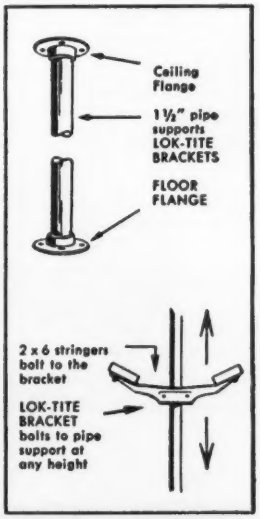
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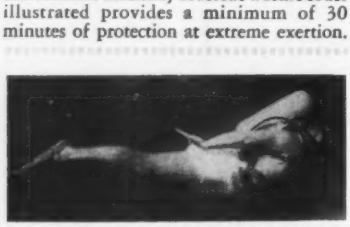
Modern Firefighting means fire attack. It calls for a fast entrance to fight fires at their source. The Scott Air-Pak can be donned in seconds to get men in fast — with complete breathing safety, to reduce fire losses and increase efficiency of rescue work. Model illustrated provides a minimum of 30 minutes of protection at extreme exertion.

Modern Firefighting includes, too, trained personnel and equipment to render first aid to the rescued. A Scott Oxygen Inhalator will help keep smoke and accident victims alive until the ambulance arrives.



A modern Fire Service must also include water rescue work and underwater search. The Scott Hydro-Pak has a full face mask for wide-area underwater vision. It is the world's finest and safest underwater breathing equipment.

Provides Unlimited Vision in all direction. Helps wearer keep out of danger zones. Makes rescue work safer and surer. Replace your old face pieces now with the modern Scottoramic.

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June 11-13—Montana State Fire Chiefs Association. Annual meeting, Miles City, Mont. Secretary-Treasurer, William S. Hayes, 208 Eklund Building, Great Falls, Mont.

June 17-20—Colorado State Firemen's Association. Annual meeting, Sterling, Colo. Secretary, Arthur J. Becker, 2224 South Stuart Street, Denver 19, Colo.

June 22-25—New England Association of Fire Chiefs. Annual meeting, The Wentworth, Portsmouth, N. H. Secretary-Treasurer, John W. O'Hearn, 206 Mt. Auburn Street, Watertown 72, Mass.

June 25-27—International Fire Buff Associates, Inc. Annual meeting, Nashville, Tenn. Secretary, Ed R. Damaschke, 915 West Marshall Avenue, Ferndale 20, Mich.

June 28-30—Saskatchewan Association of Fire Chiefs. Annual meeting, Valley Centre, Fort Qu'Appelle, Sask. Secretary-Treasurer, Chief Ray Horne, Fire Headquarters, Swift Current, Sask.

July 13-15—Michigan State Fire Chiefs Association. Annual meeting, Oscoda, Mich. Secretary, Chief Harry L. Ridout, Fire Headquarters, Muskegon Heights, Mich.

July 20-21—Wisconsin State Fire Chiefs Association. Annual meeting, Janesville, Wis. Secretary-Treasurer, Chief Douglas J. Dunlop, 1463 Underwood Avenue, Wauwatosa 13, Wis.

July 27-29—Wisconsin Paid Firemen's Association. Annual meeting, Superior, Wis. Secretary, Bob Madden, 1240 Wolff Street, Racine.

Aug. 13-15—International Rescue and First Aid Association. Annual meeting, Minneapolis, Minn. For information, write Max L. Spray, Executive Director, 101 North Alfred Street, Alexandria, Va.

Aug. 20-22 — Cumberland Valley Volunteer Firemen's Association. Annual meeting and fire prevention conference, Harrisonburg, Va. Secretary, D. Stalnaker, Fire Company No. 1, 56 Newman Avenue, Harrisonburg, Va.

Aug. 31-Sept. 3—International Association of Fire Chiefs. Annual meeting, Grand Rapids, Mich. Secretary-Manager, B. Richter Townsend, 232 Madison Avenue, New York 16.

Sept. 17 — Delaware Fire Chiefs Association. Semi-annual meeting, Christiana, Dela. Secretary, Howell H. Barnes, Smyrna, Dela.

Sept. 18-19—Delaware Volunteer Firemen's Association. Annual meeting, Newark, Dela. Secretary, E. Reynolds Bradley, Smyrna.

Sept. 21-23—New Mexico State Firemen's Association. Annual meeting, Carlsbad, N. M. For information write Chief Ira J. Stockwell, Fire Station No. 1, Carlsbad, N. M. □□

Argentine Fire Fighters Due

Ten fire fighters from the Argentine Republic left their home towns January 24 on a "good will trip" to the United States.

Driving two 30-year-old pieces of apparatus, their plans call for motoring to Chile and up the Pacific Coast to Buenaventura, Columbia. From there, if all goes well, they plan to go by ship to Panama, thence through Central America. They hope to reach Washington in about three months.

The firemen are members of the volunteer brigade in the La Boca suburb of Buenos Aires. Their leader, Lieutenant Luis Baragli, said: "Our trip has only one aim—to fraternize with the different fire corps of the Western Hemisphere and to know each other better."

the round table

discussion of current fire department and fire management problems

Handling Gasoline Spills

THIS IS THE SECOND installment of the Round Table on how fire departments handle gasoline spills.

The generous response from our readers makes it necessary to carry the discussion over to the April issue. The editors will welcome any additional comments on the subject. Address replies to Round Table Editor, FIRE ENGINEERING, 305 East 45th Street, New York 17, N. Y.

The Discussion

M. H. Sutton, Chief, Washington 1, D. C.: Our method for handling gasoline spills on highways and streets requires flushing the flammable liquid into sewers. It is supplemented by the use of foam and sand when the situation requires.

We take precautions to prevent fire occurring at storm sewer discharges, sewage plants, etc., where gasoline may eventually collect.

As the flow of the liquid does not flow through nearby communities, notification is not necessary.

Ralph C. Williams, Chief, Bedford, Ind.: As we are located on a hill with a stream surrounding us and with storm sewers discharging into it, we do not have any trouble with flammable liquids collecting. We just use plenty of water and flush the liquids into the sewers.

R. D. Knox, Chief, Birmingham, Ala.: We fully realize the hazard involved by flushing the flammable liquid into sewers but we do not know of a lesser evil or better practical way for coping with gasoline spills.

We do not take precautions on small spills. This does not mean that we approve of this method; it merely means that we use it.

The proper authorities were notified on one occasion when several thousand gallons were dumped into a creek which flowed through a neighboring community.

We would like to know of a better *practical* method for disposing of spilled gasoline.

F. T. Scully, Chief, Waterbury, Conn.: We flush flammable liquids into sewers.

Precautions are taken for preventing fires at storm sewer discharges, sewage plants, etc.

We alert our sewage disposal plant, which in turn notifies nearby communities if liquid might pass through them.

Here in Waterbury, we have some manholes which empty into a river, while others are connected to a sanitary system which terminates at our sewage disposal plant. When a spillage of flammable liquid occurs, we flush the liquid into manholes and at the same time notify our disposal plant. If liquid has a chance of terminating at the disposal plant, they simply divert the liquid into the nearby river and as stated, then notify nearby communities.

Chief of the Fire Department, Concord, N. H.: In our department, we flush flammable liquids into sewers.

We take the necessary precautions to prevent fire occurring at storm sewer discharges, etc.

The proper authorities are notified in the event the flow of liquid passes through nearby communities.

If flushing is not employed, we use sand.

J. H. Freeman, Chief, Tucson, Ariz.: Our department flushes flammable liquids into sewers.

All downtown streets empty into storm sewers. These storm sewers empty into a dry river bed removed from buildings of any sort. The flow from these sewers does not run through any other communities.

Al Boulton, Chief Fire Inspector, Peoria, Ill.: If there is any way possible to keep liquids out of the sewer, we do this first. If the fuel has already started to run into the sewer, there is no other way but to rope off the block each way and wash off the street.

All sewers are flushed out. Sewage plants are notified to shut off the valve leading to the plant and to direct the

THIS MONTH'S QUESTIONS

Does your method for coping with gasoline spills on highways and streets require flushing the flammable liquid into sewers?

If so, do you take precautions to prevent fire occurring at storm sewer discharges, sewage plants, etc., where gasoline may eventually collect?

If the flow of the liquid passes through nearby communities, is notification given to the proper authorities?

If flushing is not resorted to, what method is employed for disposal?

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The WX-10 weighs 150 pounds.

Pressure	50	100	150	200	225	250
Gals. per min.	40	38	37	36	35	32

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FIRE EQUIPMENT DIVISION

SEATTLE 1, WASHINGTON

sewer in another direction, away from the open flames of sewage gas.

All proper authorities are notified if the flow of liquid passes through nearby communities.

If it is possible to dike it off and use suction pumps, this is done, and on occasion we have followed this procedure.

Steve Taylor, Chief, Boise, Idaho: The Boise Fire Department flushes flammable liquids into street drains but not into sewers connected to the sewage disposal plant.

If considered necessary, the proper authorities are notified if the flow of liquid passes through nearby communities.

We have had a few occasions where there have been large spills and it was possible to dike. The liquid was pumped into tank trucks as much as was possible to do so, and the remainder flushed by opening fire hydrants enough to cause a large flow of water.

Ted Yeary, Chief, Middlesboro, Ky.: In my opinion, flushing of gasoline spills or pumping of gasoline from storage tanks underground which have been in a flooded area, should never be done. However, if there is no other way to dispose of it, flushing will have to be resorted to. Under these circumstances, the fire department should notify the city sewage disposal plant employees so that the plant can be put on the alert and all pump pulling lines where gasoline vapors may have collected can be put in operation, and the plant ventilated to prevent an explosion. Each manhole along the gasoline route should be checked to see that grated covers are clean or that solid covers are removed, so fumes can escape under someone's supervision at each manhole along the line. A good flow of water down the storm sewer catch basin would help carry the vapors away. Gasoline from service station tanks should be pumped into tank trucks and hauled to some safe place for disposal.

E. E. Moody, Chief, Albany, Ga.: When coping with gasoline spills, we flush the flammable liquid into sewers.

Our sewers are connected directly to the river. We try to use a large quantity of water to give good flushing.

Liquid does not flow through other communities.

Harold E. Simpson, Chief, Portland, Ore.: Gasoline is usually flushed into sewers.

Precautions are taken, if the spill is a large one.

Our sewers do not pass through any other community.

R. L. Rudd, Chief, Fort Smith, Ark.: Flushing is the only practical way we have found of removing gasoline spills from streets. However, we have been fortunate in that we have not had any large or extensive spillage.

Our storm sewers empty into the Arkansas River and there is no particular danger of fire at that point.

The sewers do not pass through any nearby community. □□

Training Position Open

The State of Connecticut has announced creation of a new position "Coordinator of Training" in the vocational education program for fireman's training. The post will pay $5,940 to start with six annual increments of $300 to a final salary of $7,740. A $180 cost-of-living adjustment is also paid after the first year.

Duties of the position will be to take charge and operate the state firemanship training program and to be responsible to the chief, Bureau of Vocational Services, for such activities.

Any physically fit United States citizen, 18 years of age or over, who is a high school graduate and has had a minimum of eight years of fire protection experience may apply. A bachelor's degree or advanced training and additional experience will be an asset to a candidate for the position. Required teacher-training courses may be taken by an otherwise qualified appointee during the first year of employment.

Final date for filing is May 1, 1959, and appointment is expected September 1, 1959. Request application forms from Richard W. Howes, chief, Bureau of Vocational Services, Room 302, State Office Building, Hartford, Conn.

Its fast, modern lines—its down-to-earth economy—make it choice of many!

HERE is another example of an H-H clean, streamlined, functional pumper body on a standard commercial chassis. Equipment with 500 GPM "Class A" pump—800-gallon tank—two H-H reels in side compartments, each with 200 ft. of ¾" booster hose. These compartments are fitted with automatic remote control lighting. Other compartments for generators, flood lights, portable pumps, etc. Body carries 1200 ft. of 2½", 800 ft. of 1½" and two lengths of hard suction. A thoroughly practical rig for almost any department—and at a cost surprisingly low. On 1½ or 2 ton chassis.

For further data and prices—write

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JERSEY CITY, N. J.

Chief Edward E. Wischer presenting plaques to representatives of organizations who assisted Milwaukee Fire Department during 1958 fire prevention program
—Milwaukee F. D. photo by Capt. F. C. Barth

Milwaukee Fire Prevention Plaques Awarded

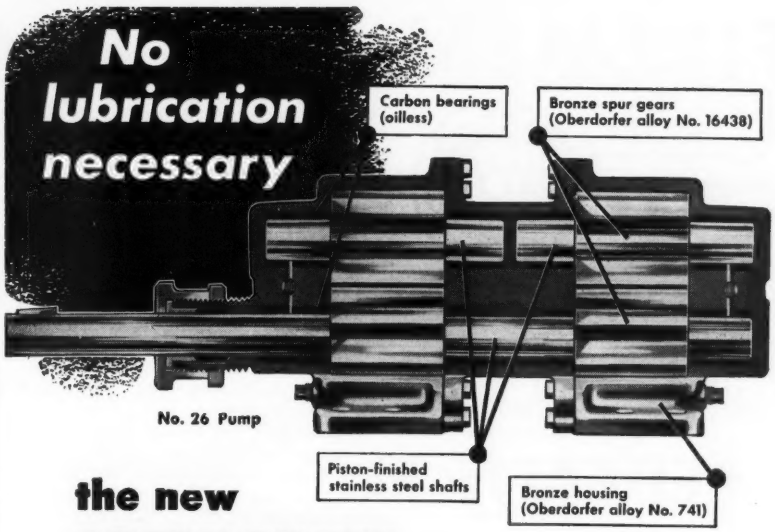
Thirty-three radio and TV stations, newspapers, business firms and charitable, religious and labor organizations were honored by the Milwaukee Fire Department at its Third Annual Fire Prevention Awards Program on February 4. The event, held in the Jos. Schlitz Brewing Company's Terminal Clubhouse, was attended by some 300 people who had been active in support of the fire department's fire safety education program. Acting Mayor Martin E. Schreiber praised those present for their cooperation in helping to preserve Milwaukee's fine fire safety record.

Fire Chief Edward E. Wischer in presenting the plaques expressed the gratitude of the entire community for the assistance given the fire department in getting the story of fire prevention to the public.

Master Mechanics Meet

The Fire Apparatus Maintenance Association held its January meeting on the 20th in Worcester, Mass. Out-going President Paul Marin, master mechanic of the Worcester Fire Department, turned his gavel over to Alonzo F. Hunt, master mechanic of Brookline, Mass., charter member of the association.

The meeting marked the beginning of the fourth year of organization for this group whose membership has grown from 36 men to well over 100, with all the New England states represented. It sponsors a continuous effort to cooperate with respective department heads and responsible manufacturers to bring before its members all technical information possible concerning their equipment.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OBERDORFER BRONZE BOOSTER PUMPS

These booster pumps with oilless bearings will last 3 to 5 times longer than the old style equipped with plain bronze bearings. As a result of closer machining tolerances, over 20 feet of suction lift may be depended on.

The No. 13 and No. 26 Oberdorfer Pumps are more fool-proof than they have ever been. When you get to a fire you have something you can count on. It isn't necessary to wear pumps out checking them periodically to see if they will work. These pumps are metering pumps in principle and therefore must produce the same volume for every revolution of the drive shaft.

PERFORMANCE DATA—No. 26 and No. 13 PUMPS

Pump No.	Pump Shaft R.P.M.	Pounds Pressure	Hose Length and Size	Dry Suction Lift in Feet	Vol. in Gal. Per Minute
26	1600	120	500'—1½"	20'	150
13	1600	120	500'—1½"	20'	75

LIST PRICES — No. 26 — $249.50 No. 13 — $122.50

Slightly higher west of Rockies

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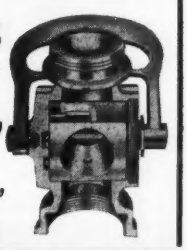

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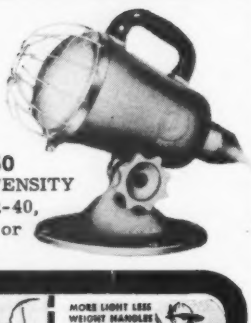

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HIGH INTENSITY
FLOOD R-40,
200-300, or
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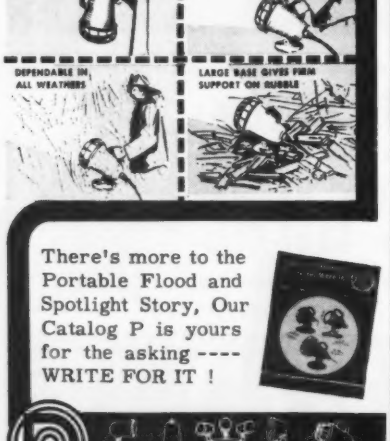
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DEPENDABLE IN ALL WEATHERS
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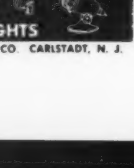


CIRCLE-D-LIGHTS
NATALE MACHINE & TOOL CO. CARLSTADT, N. J.

THE WATCH DESK

overhauling the firemanic news of the day

Beating the Bell

Captain Hume of Engine 6, San Diego Fire Department, with some of his crew was standing out in front of the fire station at Columbia and Cedar Streets on March 4, when he spotted a United Air Lines plane overhead (with 42 passengers aboard) limping toward nearby Lindbergh Field with only one of its two engines operating.

It so happens that Engine 6 is first-due fire company at the municipal field which incidentally, notwithstanding its heavy traffic, does not have its own municipal crash fire fighters.

"Get ready to roll," the captain ordered and the crew was aboard their pumper, with all their gear, before the bell banged.

Fortunately, the crippled plane — a Convair 340, en route to San Diego from Los Angeles — made a normal landing and Engine 6, summoned as a precautionary measure, was recalled by radio as it reached the field.

Two Minds—Single Thought

There's a suburban volunteer fire department near Pittsburgh, which shall be nameless, but the members of which got to wondering just how come an 18-year-old member was always first on the scene of three false fire alarms, recently.

In court on February 17, William H. Baughman admitted that he had turned in the false alarms. He explained, "I wanted to show off that I was a fireman."

The judge gave him a fine of $20 and two years probation to "show off."

Norris T. Morton

This one deals with one Robert Anderson, 35, of Plant City, Fla. He, too, was haled before the judge, charged with setting fire to a house, a church, a candy company and a downtown office building.

Anderson is a city fireman and, according to the press, he wasn't getting enough work, so he went out to create a little business for himself. It's reported he'll languish in jail for some time to come.

Jack Kearns

School to Burn in Planned Arson

The Los Angeles Board of Education has approved the request of city and state authorities to burn the abandoned Stevenson Junior High School. The planned arson calls for destruction of the old three-story structure in a series of tests in which authorities will experiment with flame-retardant chemicals and baffles, installed along walls, to see if they slow down the spread of flames.

Other tests will involve automatic vents on stair wells, curtain walls and sprinkler heads, fireproof materials, corridor sprinkling systems, automatic-closing transoms and other devices. One experiment will see the use of tumescent paint around the edges of transoms and doors which swells and seals the opening in event of fire.

According to school authorities, the test fires will cost about $10,000 in lost salvage value, but the main expense will be borne by fire authorities and the Educational Laboratories of the Ford Foundation.

Solar-Powered Call Boxes

It is reported a series of electronic call boxes to be installed along California freeways will be suggested to the State Highway Department.

The emergency system was advocated by Maurice E. Kennedy, Los Angeles County director of communications, to protect people stranded on the freeways by motor trouble, accidents, fires and other emergencies.

Located at 1000-foot intervals, the radio call boxes could be designed to operate on special batteries charged by sunlight and mounted on posts with messages to be relayed to receivers every three miles.

Hot Off the Tape

It's been a tough winter on some. Three men found warming their hands over a burning auto in Crete, Neb., were arrested for intoxication. They were turned in by a salesman who said they didn't even lift a hand to help him douse the fire . . . Firemen of Farmington, N. M., recently confiscated 50 pounds of dynamite from the home of a dirt contractor after they found several children playing with "loaded toys." According to the fire chief, the dynamite was in boxes; kids playing in the yard had found and opened them, then used the sticks for toys . . . Fire, reportedly started by lightning on March 3, destroyed a 129-year-old sugar mill in Prattville, La., "valued at $4 million" . . . John Smith (that's his real name) of Centerville, Md., is about convinced he's been building his barn in the wrong place. On February 24, fire destroyed his newest, along with 4,000 bales of hay, 40 pigs and seven brood sows. It was the third time in three years that fire has leveled Smith's barn, built and rebuilt on the same spot. First two fires were caused by lightning. The last one may have been due to defective wiring . . . As they were razing Our Lady of the Angels Parochial School in Chicago, scene of the tragic fire of last December, the toll rose to 94 with the death of 13-year-old Valerie Toma. Four youngsters are still being treated . . . Eagerness displayed by a Pittsburgh, Pa.,

fire fighter resulted in a damage suit. Driver of a certain company streaked out of his station with his ladder truck, when the hind-end swung around and struck two parked autos. Seems there was no tillerman! . . . Grateful residents of the Beverly Glen and Benedict Canyon areas ravaged by fire on New Year's Eve presented an AM-FM radio to L.A.F.D. Mountain Patrol firemen in appreciation of their efforts in saving lives and property. At the same time, Battalion Chief Henry Sawyer was given a check for the L. A. City Fire Department's widows and orphans fund as a means of thanking fire fighters from outside areas who responded to the numerous calls . . . From Canandaigua, N. Y., we're told that Leo F. Seguin, to protect his motor against freezing in late February, wrapped a blanket around it and ran an extension cord from his house, lighting a gimmick of electric light bulbs to furnish additional heat. Motor didn't freeze, but the blanket ignited and did $100 damage . . . Rebellious prisoners of Brushy Mountain State Prison, Petros, Tenn., set a coal mine afiire, but good work by firemen, according to Warden Frank Llewellyn, kept the flames from spreading to the one and a half miles of shafts piercing the Cumberland mountains . . . The Brothers of Conshohocken, Pa., answered an alarm recently from an "unoccupied" house in the suburban Philadelphia community. They found the blaze—and a 2,500-gallon still which had touched it off. State liquor agents said they'd been looking for a still in the area for the past two months.

Sounds Like a "Ripley"

Reminiscent of "Believe It or Not" was the fire January 6, in a Hawthorne, Calif., pet shop. Smoke and fire killed 50 animals, most of them mice and hamsters, and 300 birds, many of rare species, with damage estimated at approximately $5,000.

Freakish thing about the incident is that the fire extinguished itself. According to Hawthorne Fire Chief Bob Hartzell, the blaze which started from an undisclosed cause, was put out when 10 aquariums containing 1,000 fish were shattered by the heat and spilled their water onto the flames.

Firemen Get "Bum Steers"

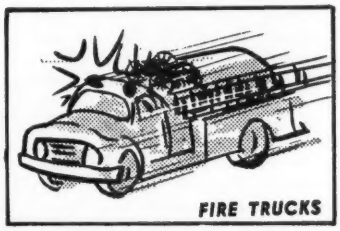
It was round-up time December 21 last, for smoke eaters of Marlboro Township, N. J. Po'dner, you shoulda seen those 40 bronco-bustin' firemen doin' their extracurricular stuff!

Using such familiar "frontier" equipment as two fire trucks, generators and floodlights, two-way radio sets and charged hose lines, the volunteer posse tried to corral four frightened steers that had jumped a fence and stampeded into neighboring Morganville Village.

Shades of Pendleton and the Last Roundup! It took a heap o' doin' but the pesky critters were finally corraled. All of the village vamps are singing "Home on the Range." □□

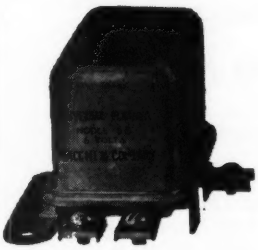
Kay-Lab Flashers for Warning Lights

"KAY-LAB" FLASHERS are specified by many fire depts. Repeatedly the choice of City, County and State governments requiring flashing lights on emergency vehicles because only "Kay-Lab" has the features specified.



"STOP-IT" SAFETY FLASHER FOR "CHIEFS" CAR

Makes lights flash on-and-off. Used for flashing warning signals and directional signals. Continues to burn lamps with a steady light in event of failure. Available in 4 types. Will flash 1 to 4, 21 candlepower lights, singly or in unison, without matching flasher to load. 6 and 12 volts.



"UNIVERSAL" ALTERNATING FLASHER—FOR "HOOK-AND-LADDERS" AND MULTIPLE LIGHT VEHICLES

Heavy duty. Meets requirements of State Laws for alternating flashing signals. Up to 15 amperes. 6 or 12 volts. No parts to wear out, requires no lubrication, no up-keep. Operates magnetically. Good for lights or horn signals.

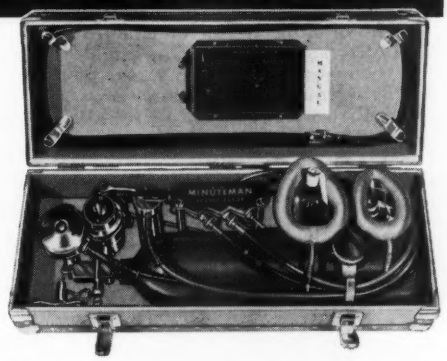
Write for Folder, Prices and Discounts.

MACCHI & COMPANY

819 Valencia Street, San Francisco 10, Calif.

The STEPHENSON MINUTEMAN RESUSCITATOR

—ready willing and able



Instant action, easy operation, equal to every respiratory emergency—briefly describes the Stephenson Minuteman Resuscitator. It protects against ALL such hazards as smoke or fume suffocation, drowning, heart attack, electric shock, asthma, etc. Extremely compact—24½" x 8¾" x 7¾", under 30 pounds with tank—it can be rushed to the scene. Yet it combines the functions of resuscitator, inhalator, and aspirator. With an extra Midget attachment, it can resuscitate two people and aspirate a third simultaneously.

The Minuteman operates about 40 minutes with a D tank. Refills are inexpensive. Pressures are adjustable from Adult to Infant. This range is essential where the patient makes the first efforts to breathe after being overcome, also in chest injuries, and in working with small children. The instrument is easily regulated to mixtures from 100% oxygen to 50% oxygen, 50% nitrogen from the air. This feature is important in prolonged cases, avoiding the possibility of oxygen poisoning.

Send coupon for full information

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RED BANK NEW JERSEY

STEPHENSON CORPORATION
Red Bank, N. J.

☐ Please send Minuteman Folder L-4
☐ Please send Bulletin: "The Breath of Life," explaining use of resuscitators.

NAME_____
TITLE_____
STREET_____
CITY_____ STATE_____

Among the Buffs

By Paul C. Ditzel

LOTS OF HOT AIR at the annual mid-winter meeting of the International Fire Buff Associates in Chester, Pa., but not half so much as that which was going on in Baltimore, Chicago, and Boston, while the buffs were in session. When they learned of this in Chester, the fire bell and horn let go at 10:07 and the buffs saw how the Chester vamps put out stub-born warehouse blazes.

"After this extra attraction," reports Henry G. Nathan who holds the title of IFBA Director of Public Relations, "the buffs returned to the Moyamensing fire house and to business."

The main topic was the seventh annual convention which will be held in Nash-ville from June 25 to 27, with the Noel Hotel serving as headquarters, (Secretary Ed R. Damaschke, 915 West Marshall Avenue, Ferndale 20, Mich., has infor-mation on this for interested members and clubs who would like to join with the International Fire Buff Associates. Inc.)

Dr. Paul Morrisey, Jr., will be in charge of the Nashville arrangements and he assures officers of the IFBA that the convention will be a gala one with the city and the Nashville Fire Buff Club rolling out the fire-engine-red carpet, as the cliche goes. It was also announced at the meeting that membership applications for three more clubs were being proc-essed and that they would be taken into membership at the convention.

There were about 50 out-of-towners present including officers, guests, and their wives. Activities opened with a re-ception and dinner at the Hotel DuPont in Wilmington. Special guests included Fire Chief Clark of Wilmington, Fire Chief Bomberger of Chester, and Mayor Eyre of Chester.

Charles C. Price of the Baltimore 414 Association and International Buffs presi-dent, presided at the business meeting which was followed by a luncheon spon-sored by the Moyamensing Co. Guests toured the Chester Fire Department and were feted with a buffet dinner and dancing.

The 1960 convention, reports Brer Nathan, will be held in Chester and the Moyamensing Junior Fire Company will be hosts. This junior organization runs the coffee service in Chester. John Owen of Chester was chairman of arrangements for the meeting and he was assisted by Ed Gill of Chester who is an IFBA vice president.

While the buffs were meeting, one of the 414 Association boys who preferred to stay home to buff, telephoned the Bal-timore fans to report that a six-alarmer was going in a Gorsuch Avenue chemical plant and a two-bagger was causing the shaving lotion to boil in a barber shop. Out in Chicago things were humming as usual with a 5-11 and a 2-11 on the blackboards. Boston, too, was galloping to some working beauts.

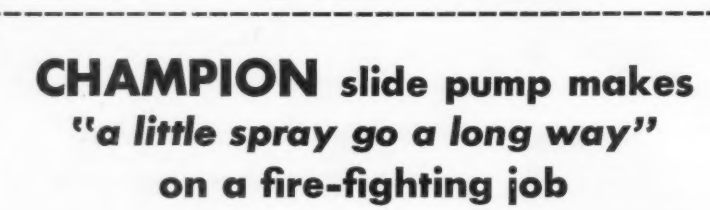
Comes now Editor Ray Wheatley to toll the bell for Baltimore 414'er Bob Serio, assistant editor of the club's "Gen-eral Alarm," who will shortly become married to Edith Louise Gesswein. She has, Ray reports, been seen on the fire grounds with Bob many times and has helped in many affairs sponsored by the club. Edith comes to firefanetting by way of her Dad, F. F. Louis Gesswein of Engine Company 31.

Ira Marion, who is equally famous as a member of the Third Alarm Association of New York City as he is for his work as a nationally known broadcasting writer, reports his son, Kenneth Philip Marion, 9, had been "made" Junior Fire Buff No. 2 by George David, chief of the New York City Fire Department. Ken-neth embarked upon his career with a lecture to the assemblies in his public school. The title? "Fire Prevention Ac-tivities Anyone?" What else would he talk on?

In case anyone feels like writing a letter, Gil Jory reports that his latest ad-dress is USS Des Moines (CA 134), c/o Fleet Post Office, New York, New York. Gil's note was sent from Villefranche, France, which if it's what I'm suspecting, the cruise of the Des Moines must be one of the most fascinating news stories in Naval history.

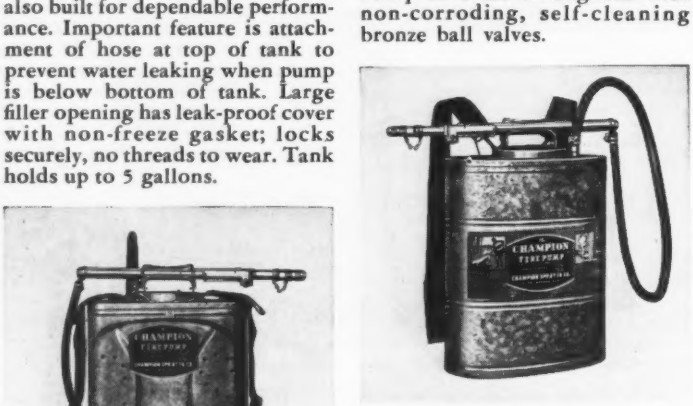
The Boston Sparks Association met re-cently with The Tapper Club and the Box 52 Club, with the latter serving as hosts for the evening in the Old Boston

CHAMPION slide pump makes "a little spray go a long way" on a fire-fighting job



HEAVY-DUTY PUMP has Champion-designed handle which lowers to any convenient position for easy operation. When not is use, the sturdy handle locks pump in closed position and positive-locking de-vice on cover holds pump securely. Pump is brass throughout with non-corroding, self-cleaning bronze ball valves.

ADVANCED-DESIGNED TANK is also built for dependable perform-ance. Important feature is attach-ment of hose at top of tank to prevent water leaking when pump is below bottom of tank. Large filler opening has leak-proof cover with non-freeze gasket; locks securely, no threads to wear. Tank holds up to 5 gallons.



VENTILATED BACK is form-fitting and, providing air circulation be-tween tank and operator's back, guards against discomfort. Wide, adjustable straps make it easy to carry as knapsack.

Piston-type pump also available. Write for literature on both models. Distributor inquiries invited.

CHAMPION SPRAYER COMPANY

Manufacturer of Portable Sprayers and Dusters

6509 HEINTZ AVENUE · DETROIT 11, MICHIGAN

Room of The Parker House. Not a bad idea for clubs to get together in joint session. Have any others tried it? No fist fights over either hydrants or the bread sticks, reports Executive Secretary George A. Melchin, 22 Prescott Street, Cambridge 39, Massachusetts who sends in the information.

Same mail brought the bulldog edition of the "AAF Newsletter," new publication of the Association of Auxiliary Firemen of Manhattan. It is edited by William Grief Jr., who will have loads of that before he gets done, and assisted by George M. Van and Edward Flanagan. Sorry I cannot report the club's address, but if you want to call them, ask the operator for Hickory 6-4715. Don't call me. Officers of this illustrious New York group are: John Moore, president; Rocco DeLorenzo, vice president; Bernard Grandjany, secretary-treasurer; and Edward Pospicil, sergeant-at-arms.

That's bingo for another 30 days when I'll be back—God and the income tax collector willing—to report on the latest work of the Chicago Fire Fans Association who did yeoman duty at the Lady of Angels Disaster and who have presented $200 to the Salvation Army.

(I finally became a columnist after lo these many years when I got a poison pen letter out of Chicago from someone who doesn't appreciate—along with my wife and Editor Don O'Brien—my brand of humor.)

The address for all gratuities remains the same: Box 8731, Cranshaw Station, Los Angeles 8, Calif. □□

Rescue Work Depicted On New TV Program

A television series based on actual experiences of members of the Los Angeles County Fire Department Rescue Squad is being produced and distributed by Screen Gems, Inc., television subsidiary

Hollywood actors Jim Davis (left) and Long Jeffries portray members of the Los Angeles County Fire Department's Rescue 8 on television

of Columbia Pictures Corp. The series has been sold to more than 100 stations and is presently being telecast by about 60 of them. The weekly 30-minute show will dramatize 39 incidents and may be extended depending on the response. While technically accurate, the program is entertainment rather than documentary.

in 90 seconds

Your Station Wagon Can Live

A DOUBLE LIFE

Emergency Vehicle . . . Passenger Carrier . . . one station wagon serves as both with a Bomgardner conversion unit. Two plates on the floor of the vehicle do the trick. Installation in 1½ minutes. Make two vehicles from one at low, low cost.

Write for complete information.

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BOMGARDNER — THREE GENERATIONS OF TRADITION & EXPERIENCE — SINCE 1898

Cots and stretchers for every plant need.

ECONO-RAK NEW! LOW COST HOSE STORAGE RACK

CUSTOM BILT

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ALL STEEL CONSTRUCTION

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NO WOOD STRINGERS TO ROT, SAG, WARP AND CAUSE MILDEW

Econo-Rak enables you to convert waste space into an attractive hose storage area. This new rust-resistant, all steel unit fits anywhere. Uprights and stringers may be cut for an exact "custom fit."

You will be proud to own and display Econo-Rak. The quality and workmanship are the best, and the low price is possible only through efficient high production methods. Don't settle for less; Econo-Rak costs no more than makeshift pipe and wood racks.

WRITE FOR FOLDER

THE CIRCUL-AIR CORPORATION 575 EAST MILWAUKEE DETROIT 2, MICHIGAN

Daily People's Press Photo

PORTABLE WATER TANK was put to use by the Rural Fire Department from Owatonna at the Clem Resler fire on the Lemond Road Sunday. While the pumper (on the left) fed from the 1000 gallon Fol-Da-Tank, the tanker (on the right) was returned to Owatonna to be refilled and driven back to the fire. Volunteers can be seen through the steam of the water as they emptied milk cans of water into the tank, taken from the milkhouse outlet a distance away. The portable tank operates much like a baby's playpen through its folding sides.

For further information on these 600 and 1000 gallon canvas or vinyl-coated nylon Fol-Da-Tanks, contact your local distributor.

FOL-DA-TANK CO., Box 361, Rock Island, Illinois

Whether you're riding the tailboard, up fire escape or ladder, or caught in smoke — SCOTCHLITE FABRIC adds to your safety, identifies you quickly, increases overall efficiency! It's 100 times brighter than the whitest white paint. More and more modern departments are making it a "must"— and GLOBE SUITS have it for you! Scotchlite lettering also available.

Write now for fully illustrated, colorful, 8-page catalog on the complete GLOBE firemen's suit and accessories line.

Obituaries

Chief R. J. McAllister

Robert J. McAllister, 37, chief of the Plymouth, Mich., Fire Department, died suddenly on March 8. He had complained of pains in his chest while at home and visited a doctor. He was taken to the hospital where he died shortly after arrival.

Chief McAllister was a director, International Association of Fire Chiefs, from the Great Lakes Division and a member of the program committee for the forthcoming I.A.F.C. conference in Grand Rapids.

He was a member of the Kalamazoo Township, Mich., Fire Department for five years and the Dearborn, Mich., Fire Department for one year prior to becoming chief at Plymouth in 1946. During World War II he served in the Air Force.

He is survived by his wife and three young children.

Ex-Chief L. E. Wagner

L. Ellis Wagner, 79, retired York, Pa., fire chief and past president, Eastern Association of Fire Chiefs, died February 27 at York Hospital. He had been under treatment for a heart condition.

Chief Wagner began his fire fighting career in 1904 and headed the York Fire Department for 28 years before his retirement in 1957. He was a past director of the International Association of Fire Chiefs and a member of the Keystone Fire Chiefs Association.

Glenn T. Scott

Glenn T. Scott, 67, retired Kansas City district manager, American LaFrance Corp., died in the garden of his Carmel, Calif., home on February 26 from a coronary attack.

Well-known in the entire midwest, he was a member of the International Association of Fire Chiefs and an honorary life member of the Missouri Valley Association of Fire Chiefs.

Francis X. Cotter

Fire Commissioner Francis X. Cotter, 63, Boston, Mass., died at his home on February 26 of a heart attack. He had served as commissioner since February 1, 1954. Previously he had been commissioner of veterans' services for the State of Massachusetts and the City of Boston.

John H. Hancock

John H. Hancock, 56, representative of Eureka Fire Hose and Peter Pirsch and Sons Co. in the Atlanta, Ga., area, was found dead in his car in the garage of his Atlanta home on March 3. He was said to have been in poor health for some time. □□

Additional Information on Crash Fire Fighting

In the February issue a notice appeared on fire fighting within the Air Force which has caused some confusion regarding availability of the crash training.

These paid fire fighting positions are open only to commissioned and enlisted members of the Air Force Reserve. If not a member of the Reserve, an applicant must join in order to participate. Since direct commissions are not being awarded at the present time, enlistment in the Air Force Reserve is the only door open to this program. Those interested should inquire at the nearest base possessing a Reserve fire fighting vacancy.

All areas do not have such vacancies. Positions are now available at the following bases:

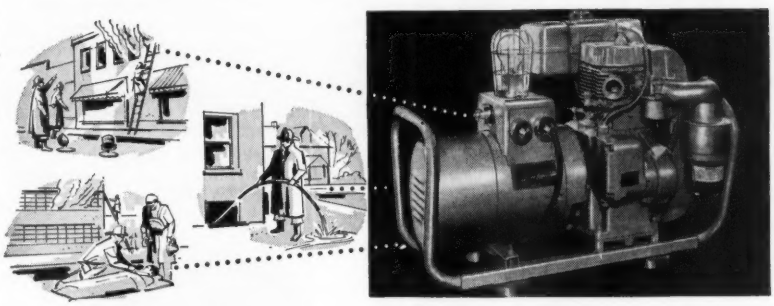
Maxwell AFB, Ala.
Sacramento Air Materiel Area, Sacramento, Calif.
Edwards AFB, Calif.
Castle AFB, Calif.
Ent AFB, Colo.
Dover AFB, Dela.
Orlando AFB, Fla.
McCoy AFB, Fla.
Scott AFB, Ill.
Westover AFB, Mass.
Malmstrom AFB, Mont.
Pease AFB, N. H.
McGuire AFB, N. J.
Kirtland AFB, N. M.
Holloman AFB, N. M.
Sherman AFB, Okla.
Altus AFB, Okla.
Olmstead AFB, Pa.
Shaw AFB, S. C.
Myrtle Beach AFB, S. C.
Sewart AFB, Tenn.
Fairchild AFB, Wash.
Andrews AFB, Washington 25, D. C.

New Disaster Film

The Department of Defense recently issued a new 16 mm sound film entitled "Military Assistance to Civil Authorities in National Disaster." Information may be obtained from United World Films, Inc., 1445 Park Avenue, New York, N. Y.

Firefighters' Friend ...Portable Power!

Fairbanks-Morse generator is on the spot in all emergencies!



Meet a firefighters' friend, the rugged F-M portable 25P-36 generator. It's a one-man model built to give years of use under the toughest conditions. Carry it... mount it on a pumper, squadrol or truck ...it has power to spare for lights, pumps, radios, and other vital rescue equipment.

These reliable low cost Fairbanks-Morse standby generators are available in five capacities from 600 to 2500 watts. 115 volts, 60-cycle A.C., with manual starting. For complete specifications, write Fairbanks, Morse & Co., 600 South Michigan Avenue, Chicago 5, Illinois.

FAIRBANKS-MORSE
a name worth remembering when you want the BEST

GENERATING SETS • WATER SYSTEMS • MAGNETOS • PUMPS • MOTORS • SCALES • DIESEL LOCOMOTIVES AND ENGINES

Eastman 3 way DELUGE GUN

The NEW HAND WHEEL CONTROL enables one man to operate the gun.
It will hold in any position.
EASY TO OPERATE — STURDY — SAFE
Send for complete information

SAMUEL EASTMAN CO., INC.
CONCORD, NEW HAMPSHIRE

Next to your pumper . . . the New

HALE FZZ or FZ is the Most Useful Emergency Fire Fighter You Can Own!

The new lightweight FZZ and FZ Hale Portable fire-fighting units are a *must* for fire fighters everywhere. Dependable, Versatile and Rugged, each weighs only 148 lbs; is conveniently portable by two men.

They can be easily mounted or carried on any type of apparatus or truck for fighting fires while in motion. Both are extremely valuable for pumping from inaccessible water source into major pumper, for fighting fires direct, and for performing dozens of pumping chores that save wear and tear on the Major Pumper.

Type FZZ—Packs a PRESSURE Punch

- 2½" Suction and 1½" Discharge.
- Best for Fire Companies that frequently pump through a 2½" line *over* 350 ft. long.
- Supplies from Draft (on a 10-ft. lift) 60 U. S. GPM at 90 P.S.I. with ease.

Type FZ—Packs a VOLUME Punch

- 3" Suction and 2½" Discharge.
- Best for Fire Companies that frequently pump through a 2½" line *not* over 350 ft. long.
- Supplies from Draft (on a 10-ft lift) 85 U. S. GPM at 60 P.S.I. with ease.

Please send information immediately on your new, improved FZZ and FZ portable fire pumping units. Dept. FE

Name_____

Address_____

Town_____ State_____

HALE FIRE PUMP CO. CONSHOHOCKEN, PA.

Persons in the News

Thomas Retires from Hartford; Joins NBFU

Henry G. Thomas, a member of the Hartford, Conn., Fire Department for 41 years, and chief since 1946, retired on April 5. He joined the staff of the National Board of Fire Underwriters on April 15, with headquarters in the east. He will work with Jay W. Stevens, assistant manager of the NBFU San Francisco office, in furtherance of the home fire inspection program of the International Association of Fire Chiefs.

Chief Thomas joined the Hartford Fire Department on July 16, 1917. Two years later he was advanced to an engineer, and promoted to lieutenant in 1930.

In 1933, he became a captain; in 1935, he was named deputy chief and advanced to fire marshal in 1942. In 1945, he was appointed assistant chief and became chief of department on March 28, 1946.

Currently he is president of the National Fire Protection Association and is a past president of the International Association of Fire Chiefs and the Connecticut State Fire Chiefs' Association.

Chief Thomas is director of civil defense in Hartford and a member, National Civil Defense Fire Advisory Committee, and the State of Connecticut Civil Defense Advisory Committee.

Assistant Chief Thomas F. Lee has been named acting chief pending appoint of a permanent chief.

Tom Magner

Crouthamel Retires

Lloyd Y. Crouthamel, one of the best known volunteer fire chiefs in Pennsylvania, recently resigned as head of the Dublin Fire Company, which he served as assistant chief and chief for a total of 41 years. He was one of the founders of the company which was organized in 1915. His successor as fire chief is Robert Hager who will have as aides, Robert Derr, first assistant chief, and Merrill Meyers, second assistant chief.

Sherry Chief at Richmond

Edgar A. Sherry, administrative assistant and drillmaster of the Richmond, Va., Fire Department has been named fire chief succeeding the late John F. Finnegan. Chief Sherry, a 23-year veteran, joined the department in 1935 and was promoted to lieutenant in 1946. He became a captain in 1950 and in 1952 was advanced to battalion chief in charge of the training division. In 1955 he was named administrative assistant and drillmaster.

Battalion Chief C. C. Valentine has been promoted to drillmaster and Deputy Battalion Chief John F. Finnegan, Jr., son of the late chief, has been named battalion chief.

Irving W. Johnson, Sr.

J. D. Browne Is Named Albany, Calif., Chief

Jerald D. Browne was appointed fire chief of Albany, Calif., to fill the vacancy caused by the retirement, February 1, of Chief Fred Pimental after 31 years of service. Browne had been assistant chief since 1950. He joined the department in 1930 and attained the rank of captain in 1944.

El Segundo Names Gates To Succeed Freedman

Leo B. Freedman, chief of the El Segundo, Calif., Fire Department for the past eight years, will retire on March 1. Battalion Chief Harry R. Gates, 42, has been named as his successor.

Chief Freedman joined the Los Angeles Fire Department in 1923, and left in 1943 with the rank of acting battalion chief and captain. He is an active member of the International and California Fire Chiefs Associations.

Chief Gates began his career 16 years ago with the Santa Monica Fire Department, and advanced to captain in 1952. He joined the El Segundo force as battalion chief in March 1958.

Chief Leo B. Freedman (left) congratulates his successor, Harry R. Gates, upon being named chief of the fire department

Pooler Succeeds Fales In New York State

Charles M. Fales, for the past four years chief, Bureau of Fire, New York State Division of Safety, retired April 1 and will enter business in his home town of Haverstraw, N. Y.

Roswell L. Pooler

Roswell L. Pooler of Scotia, N. Y., has been named to succeed him. Pooler, a former Watertown, N. Y., fireman was a field representative in the State Bureau of Fire from its inception in 1948 until his promotion in 1953 to the post of executive assistant to the director. He resigned in 1955 and for a time represented the Seagrave Corporation in apparatus sales. Recently he has been district manager of a security investment firm.

New Chief Named At Berlin, N. H.

Adelard LaBranche was named chief of the Berlin, N. H., Fire Department effective February 1, replacing Chief O. B. Bergquist who retired after 40 years of service. Chief LaBranche has been a member of the department since 1930.

Brunton Promoted

Battalion Chief George E. Brunton, Los Angeles County Fire Department training officer, has been promoted to assistant chief and assigned to command Division I. Brunton joined the department January 4, 1942 as a fireman and served continuously except for two years during World War II, when he was assigned to the U. S. Navy Fire Fighting Training School, Mare Island, Calif.

Cliff Dektar

Kellenburger Retires; Tyler Named Chief

Robert Tyler advanced from assistant chief to chief of the Monticello, Ind., Fire Department on February 1, on the retirement of Frank Kellenburger who had been a fire fighter for 42 years. William Heath became assistant chief.

Chief Kellenburger joined the depart-

MODEL 20 SIRENLITE
for Emergency Vehicles

Siren sounds a penetrating warning, red light automatically flashes authority. Traffic opens instantly, day or night. FREE ROLLING feature.

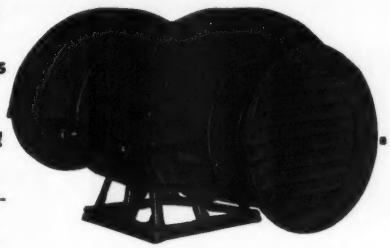
STERLING SIRENS

- HANDSOME
- RUGGED
- RELIABLE

Built by proud craftsmen to the highest standards of precision manufacturing . . . utilizing materials of finest quality . . . Sterling Sirens give year-after-year of unsurpassed dependability and satisfaction.

MODEL 20 SIRENLITE
FIRE ALARM SIREN
for Volunteer Systems

Quick acceleration, power-plus . . . Model M really gets the boys out in a hurry! Used by championship companies from coast to coast. A dependable, heavy-duty siren built of the finest materials throughout.



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The Fire Department for the Lake Valley Fire Protection District, Lake Tahoe (Bijou, California), is the proud owner of a new aerial truck built by P. E. Van Pelt, Inc., Oakdale, California. The aerial unit is a 65 foot, all electric model—a MEMCO AERIAL LADDER, *of course.*

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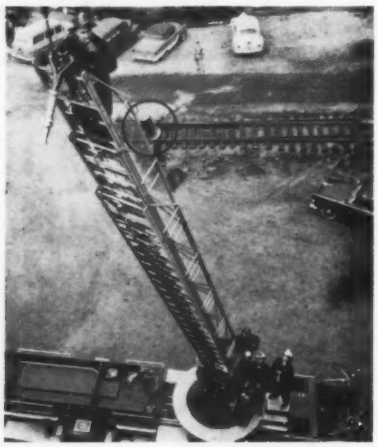
Below: Audio GUIDER *on fly-rail. Photo by Don Parker. Courtesy of Midland, (Pa.) Fire Dept., Chief Vincent D'Itri.*



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CHIEF_____

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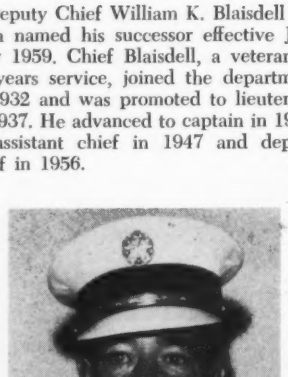
ment as a volunteer in 1916. He was a "sleeper" fireman until February 1935, and a volunteer until January 1942, when he received a regular appointment. He served as assistant chief from 1950 until October 1, 1957, when he was appointed chief.

Blaisdell Succeeds Pate at Honolulu

Chief Harold C. Pate, Honolulu Fire Department, retired in December 1958 after 30 years of service. He joined the department in 1927 and was promoted to lieutenant in 1941. He became a captain in 1942, assistant chief in 1946, deputy chief in 1947 and was named chief in August 1956.

Chief Pate

Deputy Chief William K. Blaisdell has been named his successor effective January 1959. Chief Blaisdell, a veteran of 27 years service, joined the department in 1932 and was promoted to lieutenant in 1937. He advanced to captain in 1941, to assistant chief in 1947 and deputy chief in 1956.



Chief Blaisdell

Honolulu has the largest fire department in the new state of Hawaii. It has a complement of 439 personnel, 28 engine companies, three truck companies and one fireboat. It protects an area of 604 square miles.

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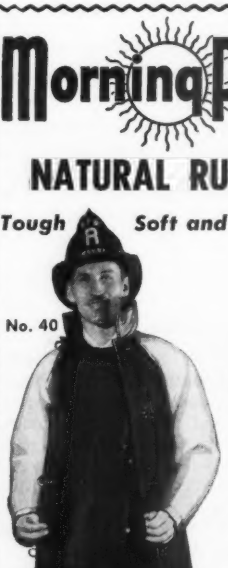

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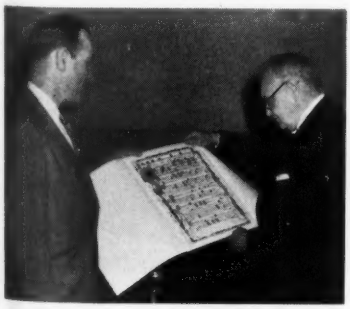
Billings Named to Succeed Johnson

John Billings, chief of the Stockton, Calif., Naval Supply Annex Fire Department since 1948, has been named head of the Oceanside Fire Department succeeding retired Chief Walter Johnson. Chief Billings placed first on a civil service list in competition with 40 candidates from the entire state. His appointment was effective February 1.

Chief Billings has previously served as a fire suppression foreman with the National Park Service and a fire fighter with the Army and Coast Guard. From 1945 to 1948 he was assistant chief at Sharpe General Depot.

Roi Woolley Honored By Westchester Chiefs

Roi B. Woolley, contributing editor of FIRE ENGINEERING, on a recent visit to New York from his home in California, was presented with a beautifully illuminated scroll by Chief Walter E. Studwell (left), president of the Fire Chief's Emergency Plan of Westchester County, and Westchester County fire coordinator.



Mr. Woolley was cited for his service to the Plan since the early days of its organization, and for his unsparing donation of time, energy and counsel to assure its success. The resolution extolled his distinguished record of service and his unselfish devotion to the welfare of the county and for the security of lives and property.

Mr. Woolley served the Plan as director, vice president, president and chairman of the educational committee.

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Prevents ice-locking of operating nut.
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Automatic lubrication of all threads and bearing surfaces each time hydrant is operated.
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Operating threads and bearing surfaces sealed from water.
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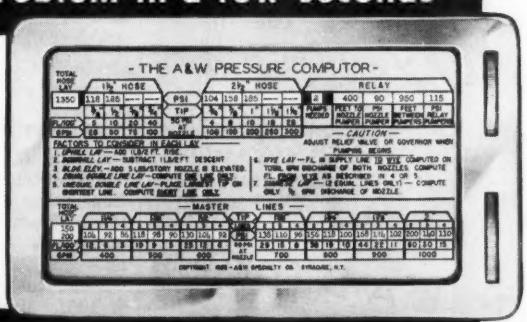

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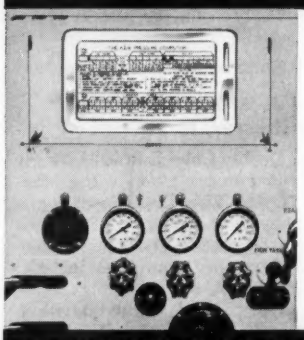

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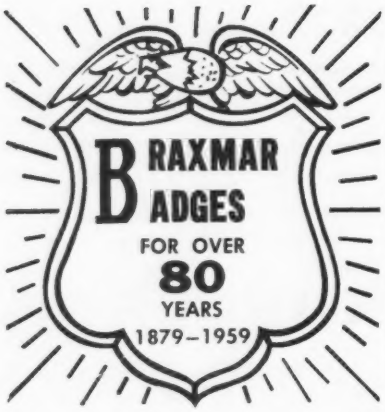

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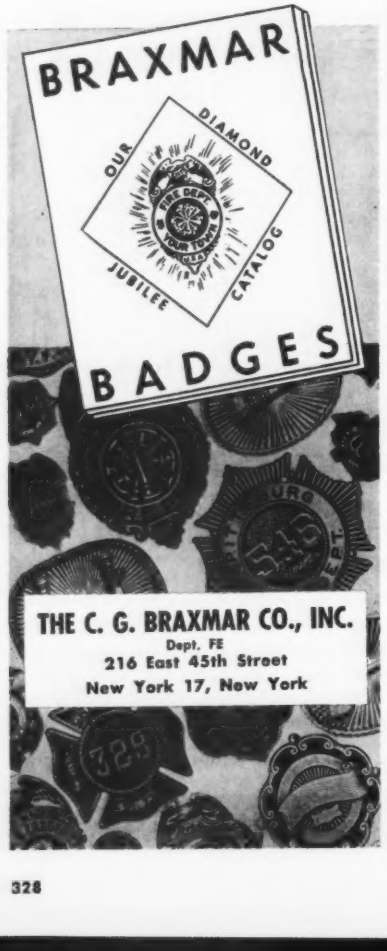

New Lakehurst Chief

August L. Hermanni has been named chief at the Lakehurst Naval Station Fire Department, succeeding Chief Faraher.

Chief Hermanni, 37, has been a member of the air station's fire department since 1948, and has held the position of assistant chief for over two years.

Chief Faraher came to Lakehurst from the Newark, N. J., Fire Department in 1945. In 1950, he received the meritorious Civilian Service Award for the extinguishment of a cyclotron fire at Princeton University.

Hofstad Named Chief At Mt. Vernon, Wash.

Herb M. Hofstad was sworn in as chief of the Mount Vernon, Wash., Fire Department on January 1. He succeeds Rutz Anderson, under whom he had served as assistant chief. Anderson resigned as chief but will remain with the department as a fireman first class.

Chief Hofstad was selected from an eligibility list submitted by the civil service commission. He has been with the department since 1943, including four years as assistant chief. Robert Hill was named assistant chief.

Edmonson Chief at Corvallis

Assistant Chief Les Edmonson was named chief of the Corvallis, Ore., Fire Department on February 1, upon the retirement of Chief Percy Tallman who headed the department for 28 years. Tallman, a fireman since 1912, became chief in 1931. Edmonson has been assistant chief since 1948.

Maatman Succeeds Ahern

Gerald L. Maatman, 29, has been named director of the Fire Protection and Engineering Department, Illinois Institute of Technology. He succeeds John J. Ahern, who is now with General Motors in Detroit, Mich.

Maatman graduated from Illinois Tech in 1951. After two years in the U. S. Coast Guard where he served as fire protection officer for southern California, he joined the Illinois Inspection Bureau where he has been for the past six years.

Edward J. Grady Chief Of Manchester, N. H.

Second Deputy Chief Edward J. Grady was promoted to fire chief of the Manchester, N. H., Fire Department, upon the retirement of Chief G. Napoleon Guevin on December 31. Other promotions made at the same time include: Henry T. Provost, second deputy; William F. Kelley, third deputy; Ovila J. Gagne, fourth deputy; and W. Russell Geer from first district chief to fifth deputy. □□

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SCOTCHLITE will REFLECT LIGHT with dazzling brillance on dark streets and in smoke filled buildings.

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RADIO RECEIVERS *especially designed for* **FIREMEN VOLUNTEERS FIRE-BUFFS**

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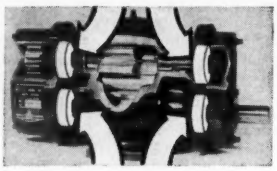

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THE versatile pump that really DOES reduce your Department costs!

ASK the Chief who uses one, **ASK** your local dealer, **ASK ANYBODY** who knows pumps!

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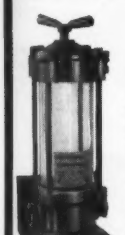

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MANUFACTURERS NEWS

Continued from page 297

ient guests to return to their rooms that afternoon. The gutted lobby was still giving off the heavy smell of deeply charred wood and burned fabric which extended to the upper floors.

Four days after the fire, a call was made to John V. Gray, manager of the local branch of Airkem, Inc., a national firm specializing in odor control. That afternoon technicians began the smoke removal job. By 6 p.m., the guests and employees are said to have noticed an improvement. All of the rooms and corridors of the 12-story building were treated. Whenever a guest complained about smoke odors in personal belongings, a technician treated luggage, clothing and other personal effects.

In the still dark lobby, heaped with debris, they set up four large vaporizing units backed up by hand-held, electrically powered units to get at all charred areas. By the end of the week, according to the manufacturer, the odor had completely disappeared.

IHC Introduces Ambulance

Fully equipped ambulances have been introduced by International Harvester Company, 180 North Michigan Avenue, Chicago 1, Ill. These light-duty vehicles are designed for municipalities, industrial plants, institutions and field operations where ambulance service is necessary but where a large investment is not practical. Four-wheel or two-wheel-drive chassis equipped with optional power steering, automatic transmission and power brakes are available. Units are fitted with an invalid cot, a folding litter with overhead mounts, storage compartments, a siren-flasher, roof ventilator and a folding rear step.

New Corridor Fire Barriers

Overly Manufacturing Company, Greensburg, Pa., is producing metal and glass doors and frames to be used as smoke and fire screens in corridors. They have been awarded a "C" label by Underwriters' Laboratory, with a rating of 45 minutes. According to the company, this is the first time frames have been so labeled.

"Fire Barriers by Overly," a 16 mm color and sound motion picture, has been released by the company. The six-minute film shows an actual fire test being conducted at the Underwriters' Laboratories

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Please send free information as checked below.

☐ Circular of firemen's uniforms and equipment
☐ Samples of all wool materials and measurement forms
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BI-LATERAL® FIRE HOSE COMPANY

BI-KLEEN, the ideal cleaning and protection agent for all cotton, rubber-lined hose, also does an amazingly fast job of cleaning oil, dirt and grease from floors—even rough, cement floors.

FIRE HOSE RACKS and truck beds need a good cleaning compound, too—and BI-KLEEN does a perfect job—keeps equipment "inspection clean" *all* the time with *less scrubbing!*

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in Chicago on the barrier, made up of metal and glass doors and frames. The film tells how these units can be placed as smoke and fire screens in the corridors of hospitals, schools, hotels and other buildings, thus providing an area of refuge within the building, from which evacuations can then be made in an orderly manner.

Suitable for fire protection officials, architectural and engineering groups, and insurance personnel, the film is available free from the company.

Safety Twin Extinguisher

The Fyr-Fyter Co., 221 Crane Street, Dayton 1, Ohio, has introduced a new 2½-pound pressurized dry chemical industrial fire extinguisher.

Finished in chrome plate or in red, the unit features a "grip fit" handle and "Formula H," a newly patented dry chemical agent. UL rating is 4-B,C.

New Beacon Light

The "RAR" Beacon Light is announced by Carpenter Mfg. Co., 936 Bradley Street, Somerville 43, Mass. The unit features a 50-candlepower bulb and a large 6-inch parabolic reflector which revolves at 70-80 rpm. The glass lens is rubber-cushion mounted in an aluminum housing. The light is available with red, blue, amber, or mixed lenses and for voltages of 6, 12, 32 d.c., as well as 115 volts a.c.

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Quick release from truck.
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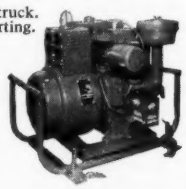


WINCO MODEL 205B14S2D—1M14C 2500 watts, direct drive, 115 volts, 60 cycle A.C. Lightweight. Carrying Cradle optional.

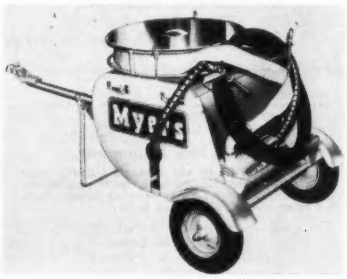
After starting, plant automatically idles, until load of 75 watts or more is applied. Automatic CONSERV-er brings engine to full power when tool is turned on, reduces engine to idling speed when tool is turned off — all automatically. This feature extends engine life, reduces fuel consumption, lowers maintenance cost.

FULL LINE — 300 WATTS TO 10 KW.
WRITE DEPT. FE-49

WINCHARGER CORPORATION
SIOUX CITY, IOWA
Subsidiary of Zenith Radio Corporation

Flexible Shaft Pump

A new portable fire pump, said to produce a stream within six seconds after the engine is started, has been introduced by The F. E. Myers & Bro. Co., Ashland, Ohio. The unit is packaged on a two-wheel trailer, including pump, engine, 100 feet of hose and a combination solid-stream and fog nozzle.



The pump is a multi-stage submersible, driven by a 20-foot rubber-encased flexible drive shaft from a gasoline engine. It is said to be instantly primed when dropped into a stream, lake, farm pond or swimming pool and delivers full capacity and pressure at once.

"Do-it-yourself" Striping

Perma-Signs and Specialties, 511 Linden Avenue, Sidney, Ohio, offers art work, Maltese crosses and monograms which, it is claimed, may be installed on apparatus simply and inexpensively by any "do-it-yourself" handyman. The manufacturer describes the method as hand-gilding with pure gold, black-edging and varnishing any design on pressure-sensitive backing, and not a decal.

Hoosier Extinguisher

A new air-pressurized water-type extinguisher called the "Hoosier," has been announced by the Elkhart Brass Mfg.

Co., Inc., Elkhart, Ind. Offered in 2½-gallon stainless steel, it is pressurized between 90 and 100 pounds.

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FIRE HYDRANTS
Fast with...
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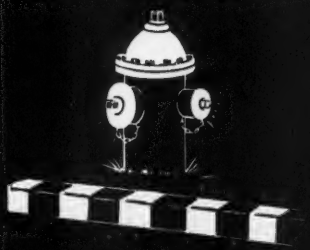

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2 Ea. Model 1500S Mack Pumpers, 500 G. P. M., 1941 Ser. Nos. 1044 & 1045, each in good condition, now in service and available for inspection. Expect units to be available on individual Bid basis on or about June 1st. Contact E. Bradley, Purchasing Agent, Municipal Building, Rockville Centre, N. Y., Phone RO 6-0300—Ext. 3.

FOR SALE

One 1931 Ahrens-Fox Triple Combination Piston Pumper, 750 gal. per minute. Large Booster Tank.

Sealed bids will be received at the Arlington Fire Department, 766 Main St., Poughkeepsie, N. Y. until 7:30 P.M., May 11, 1959.

THE BOARD OF FIRE COMMISSIONERS RESERVE THE RIGHT TO REJECT ANY OR ALL BIDS.

FIRE CHIEF WANTED

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1959 Ford, Chevrolet, or International Class A Pumper with 500 GPM Pump and 500 gallon Tank built to Underwriters Class A Requirements, for only $6,500.00.

NEED a siren or Red Light? Consult my low prices on TOP QUALITY USED SIRENS AND BEACON RAY LIGHTS, Trade-ins accepted.

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OPPORTUNITY FOR SALESMEN OR DEALERS WITH NOTIFIER

World's leading manufacturer of *complete* Automatic Fire Detection, Sprinkler Supervisory, Security Control, Watchman's Tour, and Municipal Alarm Systems. Join an organization whose established dealers are in the high income bracket. Possible to start part-time; but future is in full-time work offering you stature in your community. Engineering and sales assistance furnished by Notifier.

NOTIFIER CORPORATION
239 South 11th Street
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SPECIAL

Cast aluminum hose bridges, only 50 lbs. per set. Price reduced to $50.00 F.O.B. Elmira, N. Y.

LAWLESS FIRE EQUIP. INC.
207 W. Third St.
Elmira, N. Y.

CASH

For Old Fire Equipment

We are interested in old engines, ladders, nozzles, helmets, serviceable hose, parts and accessories. Engines must be in running order. State full price and particulars in letter.

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FIRE DEPARTMENT CHRISTMAS CARDS PARTY SUPPLIES

SEND FOR OUR NEW FREE BROCHURE FEATURING FIVE NEW XMAS CARDS FOR 1959

Fire Prevention, Antique and Modern Rigs. All Purpose and Comic Cards. All in Actual Size and Color.

COASTERS 4 Diff. Rigs 12 Doz. $4.00 Ppd. Imprinting your name. $1.25 per Gross

MATCHING COCKTAIL NAPKINS. Box of 100 $2.25. Imprinting 75¢ per box

PLACE CARDS 3 Doz. $1.00. $2.25 per 100

LARGE 4 RIG PLACE MATS. 50 $1.50 $2.75 per 100. Imprinting $1.00 Per 100 extra

HOBBY MATS
Box 145 Dept. F BALSAM LAKE, WISC.

SALESMEN

No Experience Necessary, Whole or Part Time, Fire Trucks, Hose, etc.—We train you—May have opening in your neighborhood—Write for full particulars.

CENTRAL FIRE TRUCK CORPORATION
OF ST. LOUIS
P. O. Box 158
Manchester, Mo.

MULTI-PURPOSE EMERGENCY CAR

On "Big Three" truck chassis now in use with towns, cities, fire departments, rescue squads, etc. in USA and overseas. Unlimited potential and earnings. Small investment required for exclusive franchise. Write fully:

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FIRE ENGINEERING
305 E. 45th Street
New York 17, New York

RESCUE MARKERS

Mark the homes of those who need assistance in time of emergencies with F D RESCUE MARKERS. In use throughout the U. S.

For details and FREE samples, write to:

F D PRODUCTS
514 W. ENGLEWOOD AVENUE
TEANECK, N. J. DEPT. FE6

PART TIME SALESMAN WANTED

Sell the finest fire alarm systems for homes or commercial places in your spare time. The demand for alarm systems is tremendous today. For free profit facts and product information write today.

FIRE-LITE ALARMS, INC.
192-V Fulton Terrace
New Haven 2, Conn.

SPECIAL PURCHASE SALE

Have purchased entire over-run of Gov't contract for Navy Fireman's boots; latest U. S. Spec. (April 1958), with flexible steel plate through sole and steel safety cap toe.

PRICE $12.00 Per Pair

ATKINS BROTHERS
P. O. Box 1329 Rochester 3, New York

ABSOLUTELY FREE

Yours for the asking. Send post card today requesting Folder F showing complete line of belt buckles with your name, initials, latest Fire Engines, Pumpers, Hook and Ladder, Rescue Wagons, Salvage Trucks and other Firemen enameled emblems which are also available on Tie clasps, Lapels, Money clips, Cuff Links, and Key Chains. Write:

HOOK-FAST SPECIALTIES
Box 1425 Providence, R. I.

SPARKY T-SHIRTS

LARGE BRIGHT DAY-GLO RED, YELLOW AND BLACK SPARKY AND LADDER TRUCK. FINE GRADE WHITE COTTON JERSEY. CHILDREN'S SIZES 2 THRU 12.

$1.25 Postpaid

Order Today From

ROBERTS CO.
BOX 86E WAYLAND, MASS.

And a postcard brings you a free catalog of other fire novelties and Sparky products.

Publications Available

Monitoradio Division I.D.E.A., Inc., 7900 Pendleton Pike, Indianapolis 26, Ind., has issued a new catalog page describing Models MC-40 (30-50 mc) and MC-160 (152-174 mc) crystal controlled mobile FM receivers.

Ansul Chemical Co., Fire Equipment Division, Marinette, Wis., has published a new bulletin on dry chemical fluidization of Ansul "D" Model fire extinguishers which explains why fresh-filled extinguishers outperform units subjected to vibration and packing due to transportation and long storage. It also tells how Ansul achieved maximum fluidization by improving the gas tube design and by rearranging the location of the gas ports. Ask for Technical Bulletin No. 36.

Oxygen Equipment & Service Co., 8335 South Halsted Street, Chicago 20, Ill., has issued a new inhalation therapy equipment catalog illustrating its complete "Oxequip" line for fire and police departments, industry and hospitals.

Mine Safety Appliance Co., 201 North Braddock Avenue, Pittsburgh 8, Pa., has issued Bulletin No. 0606-3, describing a fireman's helmet said to provide a tamper-proof margin of safety through use of a "fixed-crown" suspension. It is claimed the new feature provides a clearance of at least 1¼ inches between the wearer's head and the inside top of the helmet shell.

American LaFrance, Elmira, N. Y., has released a new brochure picturing its line of portable fire extinguishers and accessories. It describes all extinguishers and wheeled engine units which are approved by Underwriters' and Factory Mutual Laboratories.

Hercules Motor Corp., 101-11th Street, S. E., Canton 2, Ohio, has issued Bulletin HS-3 describing Hall-Scott six-cylinder Model 590 GV-4 gasoline engines designed primarily for fire apparatus. Said to develop 251 hp at 3,200 rpm, they are

Superior SMOKE
simulates real fire smoke for drills
NON-TOXIC
LEAVE NO RESIDUE
CONTAINS NO EXPLOSIVE

SUPERIOR Three Minute Smoke Bombs $7.50 per dozen
SUPERIOR Five Minute Smoke Bombs Six for $12.00
SUPERIOR Riot Grenade $3.00 each
Available — Order from your regular equipment dealer or write to:
Superior SIGNAL COMPANY, INC.
6 Colfax Street, South River, N. J.
All prices F.O.B. factory.

"MORSE"
SHUT-OFF NOZZLE and PLAYPIPE COMBINATION

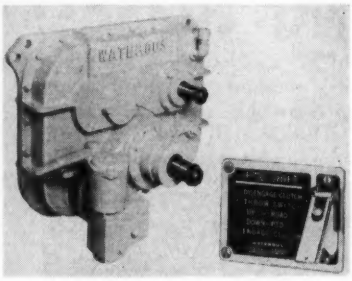
The World's Finest
Fig. 156
F. N. McINTIRE BRASS WORKS
377 Putnam Ave., Cambridge 39, Mass.
1837 - - - - - - - - - - 1959

claimed to be ideal for use with 750 to 1250-gpm pumpers as well as for ladder trucks and similar apparatus.

FWD Corporation, Clintonville, Wis., has published a new eight-page booklet on how the corporation has solved some heavy-duty vehicle problems. Ask for "World's Most Unusual Vehicle Facility."

Waterous Power Take-off

A new split-shaft power take-off, said to be capable of transmitting full engine power to operate accessory equipment, has been developed by Waterous Company, 80 East Fillmore Avenue, St. Paul 7, Minn.



The full-torque, direct-drive unit is available with speeds of from 49 to 204 per cent of input. Optional is the Waterous Electro-Matic PTO shift, and in-cab power control that simplifies operation and eliminates mechanical linkages.

Appointments and Promotions

Edward J. Doyle, Jr., has been appointed general manager of Ardmore Products, Northbrook, Ill. He joins Ardmore after many years of association with the Commonwealth Edison Company, Chicago.

Robert F. Davis has been named manager, Two-Way Radio Sales, of a 13-state Midwest area for Motorola Communications & Electronics, Inc. **Eric Goleas** will take Davis' former position of regional manager in northern Illinois, northeastern Indiana, eastern Wisconsin and Michigan's Upper Peninsula.

Richard W. Drebus has been named director of Marketing and Administrative Services in the Ansul Chemical Co.'s sales division, and will be responsible for the Special Hazards Department, Marine Department, Fire Equipment Sales Development and National Accounts Group. He was formerly manager of Sales Administrative Services.

Raymond D. Pearce has been promoted to eastern district manager of the Republic Rubber Division, Lee Rubber & Tire Corporation. He replaces C. R. Conklin who has been promoted to assistant general sales manager at Youngstown, Ohio, and will headquarter at Republic's Philadelphia office, 22nd and Race Streets. □□

PLANNING A FUND RAISING CAMPAIGN?
GET HIGH RETURNS with less effort at a nominal cost to you!

Handford Brown
COIN CARDS
The tested and proven way to raise funds. Used successfully by fire departments all over the nation. Holds up to $5.00 in quarters or $3.00 in dimes. Donations can now be given on the popular budget system.
WRITE OR PHONE FOR SAMPLES, DETAILS REGARDING DISTRIBUTION AND PRICES TODAY.
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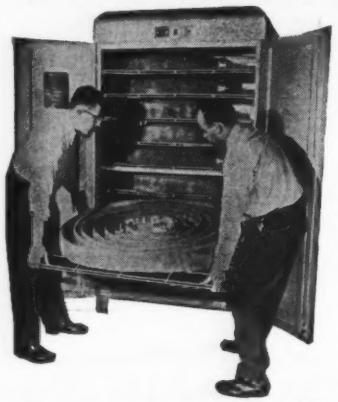
INCORPORATED
COYTESVILLE • NEW JERSEY
WINDSOR 4-0454

STOP WASTING HOSE!!

It Is EXPENDABLE . . . and EXPENSIVE. **Don't gamble against damage from mildew and rot when, for a nominal investment you can *wash it* thoroughly and uniformly, *dry it* quickly and easily, *store it* safely and conveniently. This . . . is the CIRCUL-AIR "Full Treatment."**

FIRE HOSE DRYER

The patented, electrically operated Circul-Air hose dryer circulates pre-warmed fresh air through loosely coiled hose at the rate of 5 to 6 air changes per minute. Saves floor space, hard work and lengthens hose life. No other drying method is so fast—so economical—so easy to use. Circul-Air is the preferred drying method in over 5,000 leading Fire Departments.



ACCEPTED—APPROVED—RECOMMENDED

Approved by Underwriters' Laboratories . . . and Canadian Standards Association. Recommended by all leading fire hose manufacturers.

LABORATORIES APPROVED

PORTO-RAK *MOBILE* STORAGE AND LOADING UNIT

Saves valuable space. Holds 1800 ft. of 2½" hose—proportionately more of 1½"—in an 8 ft. space (when loading table is detached). Roll it right up to the truck for complete hose reload—out of the way when not in use. Equipped with locking fiber-wheeled casters.

NEW *Roto-Jet* HOSE WASHER AUTOMATICALLY WASHES — RINSES — DRAINS HOSE

ROTO-JET Washes, Rinses, Drains hose thoroughly and quickly. Hose is self-propelled. Simple, one-man operation. With or without detergents, ashes, dirt, mud and sludge are automatically scrubbed out and flushed away. Saves time. Lengthens hose life. Now . . . with Foot Pedal Operation.

Booklet (No. 5) "Fire Station Design" Now Available
Send For Your Copy Today

THE CIRCUL-AIR CORPORATION 573 EAST MILWAUKEE DETROIT 2, MICHIGAN

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FIRE ENGINEERING

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NEERING

PIRSCH AERIALS HANDLE ELEVATED FIRE STREAMS WITH EASE AND EFFICIENCY

The Pirsch high strength aluminum alloy aerial ladder is a natural for elevated fire streams. Its excellent design and fine workmanship, the high tensile strength materials in its construction and the very high rate of thermal conductivity and heat dissipation in combination with the Pirsch full hydraulic hoisting mechanism provide the finest and best structure of its kind available for the purpose.

The great strength and load carrying ability of the Pirsch aerial ladder in rescue and other fire fighting work is as well recorded as its ability to handle elevated fire streams.

Consider this outstanding piece of equipment in buying your next aerial ladder truck. Specifications and other data will be sent upon request.

PETER PIRSCH & SONS CO. KENOSHA, WIS.

"BUILDERS OF AMERICA'S FIRST ALL-POWERED AERIAL LADDER TRUCK AND AMERICA'S FIRST 100' AERIAL LADDER"

INCREASING ACCEPTANCE OF MOUTH-TO-MOUTH RESCUE BREATHING STRENGTHENS THE CASE FOR INTERMITTENT POSITIVE PRESSURE

Let's face a generally acknowledged fact: mouth-to-mouth rescue breathing is meeting with increasing acceptance as the standard for suitable emergency resuscitation of victims of breathing failures.

The Red Cross, as well as many governmental and civic agencies, accepts this widely recognized intermittent positive pressure rescue breathing method.

There is an impressive history of arrested breathing victims who owe their lives to this dependable principle. It has proved to be effective time and time again. The evidence is irrefutable, we honestly do believe.

So doesn't it seem logical that this popular concept of mouth-to-mouth rescue breathing should be continued with a mechanical resuscitator using the same principle: intermittent positive pressure.

Once again, we honestly do believe it does.

As a result of this long stated conviction of ours, we manufacture the M-S-A PNEOLATOR®. This simple resuscitator administers automatic artificial respiration in much the same manner employed in mouth-to-mouth rescue: intermittent positive pressure.

The Pneolator inflates the lungs of the unconscious victim with life-sustaining oxygen, in the right amount, and at the right pressure for the individual's own requirements. With the Pneolator, you can quickly determine if the air passages are blocked.

Exhalation is automatic. It takes place by the normal passive return of the respiratory muscles and lungs. The M-S-A Pneolator automatically converts to an "inhalator" type apparatus as soon as the patient resumes breathing.

May we conclude on a note of caution? The first few minutes after breathing has ceased are the most critical. Artificial respiration should be started at once and continued until the Pneolator is put in use.

Please don't hesitate to get in touch with us for helpful literature, answers to specific questions, and an authoritative demonstration of the M-S-A Pneolator. Write: Mine Safety Appliances Company, Pittsburgh 8, Pennsylvania. In Canada: Mine Safety Appliances Co. of Canada, Ltd., Toronto 4, Ontario.

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MSA®
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